

WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION

Form #5

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DEC 16 4 26 PM '96

OFFICE OF WEST VIRGINIA
SECRETARY OF STATE

**NOTICE OF AGENCY ADOPTION OF A PROCEDURAL OR INTERPRETIVE RULE
OR A LEGISLATIVE RULE EXEMPT FROM LEGISLATIVE REVIEW**

AGENCY: West Virginia Board of Education TITLE NUMBER: 126

CITE AUTHORITY: W.Va. Const., Article XII, §2, and W.Va. Code §18-2-5.

RULE TYPE: PROCEDURAL _____ INTERPRETIVE X

EXEMPT LEGISLATIVE RULE X

CITE STATUTE(s) GRANTING EXEMPTION FROM LEGISLATIVE REVIEW

W.Va. Code §§29A-3B-1, et seq.; W.Va. Board of Education v. Hechler
180 W.Va. 451; 376 S.E.2d 839 (1988)

AMENDMENT TO AN EXISTING RULE: YES X, NO _____

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 44

TITLE OF RULE BEING AMENDED: Instructional Goals and Objectives for

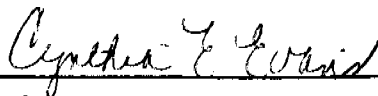
West Virginia Schools (2520)

IF NO, SERIES NUMBER OF NEW RULE BEING ADOPTED: _____

TITLE OF RULE BEING ADOPTED: _____

THE ABOVE RULE IS HEREBY ADOPTED AND FILED WITH THE SECRETARY OF STATE. THE

EFFECTIVE DATE OF THIS RULE IS July 1, 1997 (Unless specified otherwise
within the policy.)


Cynthia E. Evans
Director, Legal Services

61.10

EXECUTIVE SUMMARY

WEST VIRGINIA BOARD OF EDUCATION

POLICY NUMBER AND TITLE: Policy 2520
Instructional Goals and Objectives

PUBLIC COMMENT PERIOD ENDS: November 15, 1996 **ADOPTED:** December 12, 1996

BACKGROUND:

West Virginia Board of Education Policy 2520 provides a definition of, a delivery system for, and an assessment and accountability system for, a thorough and efficient education for West Virginia public school students. This policy defines the instructional goals and objectives for the programs of study required by Policy 2520 and establishes a standardized format for them.

PURPOSE:

The purpose of this policy is to set forth a focused and well-defined curriculum K-12 that incorporates what students should know and be able to do. These proposed instructional goals and objectives shall become the vehicle for teachers to focus and target their instruction toward critical skills.

The revised instructional goals and objectives for English language arts, mathematics, social studies and science are aligned with the objectives assessed on the statewide standardized test, include process workplace skills, incorporate computer/technology objectives in each core curriculum area at each grade level, and define a challenging and rigorous curriculum for all students. A partnership of teachers, principals, county administrators, college and university faculty, Department of Education representatives, business and community members collaborated in the production of the instructional goals and objectives.

IMPACT:

The use of the revised instructional goals and objectives will help schools establish well-defined curriculum that focuses instruction on mastery of critical skills with opportunities for immediate reteaching when necessary that should result in more consistent and higher achievement for all students.

FISCAL IMPACT:

No cost to local schools or county boards of education will result from this policy.

126CSR44

**TITLE 126
LEGISLATIVE RULE
BOARD OF EDUCATION**

**SERIES 44
INSTRUCTIONAL GOALS AND OBJECTIVES FOR
WEST VIRGINIA SCHOOLS (2520)**

§126-44-1. General.

1.1. Scope. -- West Virginia Board of Education Policy 2520 provides a definition of, a delivery system for, and an assessment and accountability system for, a thorough and efficient education for West Virginia public school students. This policy defines the instructional goals and objectives for the programs of study required by Policy 2520 and establishes a standardized format for them.

1.2. Authority. -- W.Va. Constitution, Article XII, §2, and W.Va. Code §18-2-5.

1.3. Filing Date. -- December 16, 1996.

1.4. Effective Date. -- July 1, 1997.

1.4.1. Unless specified otherwise within the policy.

1.5. Repeal of former rule. -- This legislative rule repeals and replaces WV 126CSR44 (Policy 2520) and repeals WV 126CSR44C (Policy 2520.02), WV 126CSR44G (Policy 2520.04), WV 126CSR44E (Policy 2520.08), WV 126CSR44I (Policy 2520.09), and WV 126CSR25 (Policy 2422.91).

§126-44-2. Purpose and Format.

2.1. This policy defines the instructional goals and objectives for the programs of study required by Policy 2520 in English language arts, mathematics, science and social studies. The instructional goals and objectives for all other programs of study required by Policy 2520 are being rewritten and will be available as quickly as possible.

2.2. The instructional goals and objectives for all programs of study required by Policy 2520 shall be developed, approved, and published in the format used for the current revision of the instructional goals and objectives for English language arts, mathematics,

126CSR44

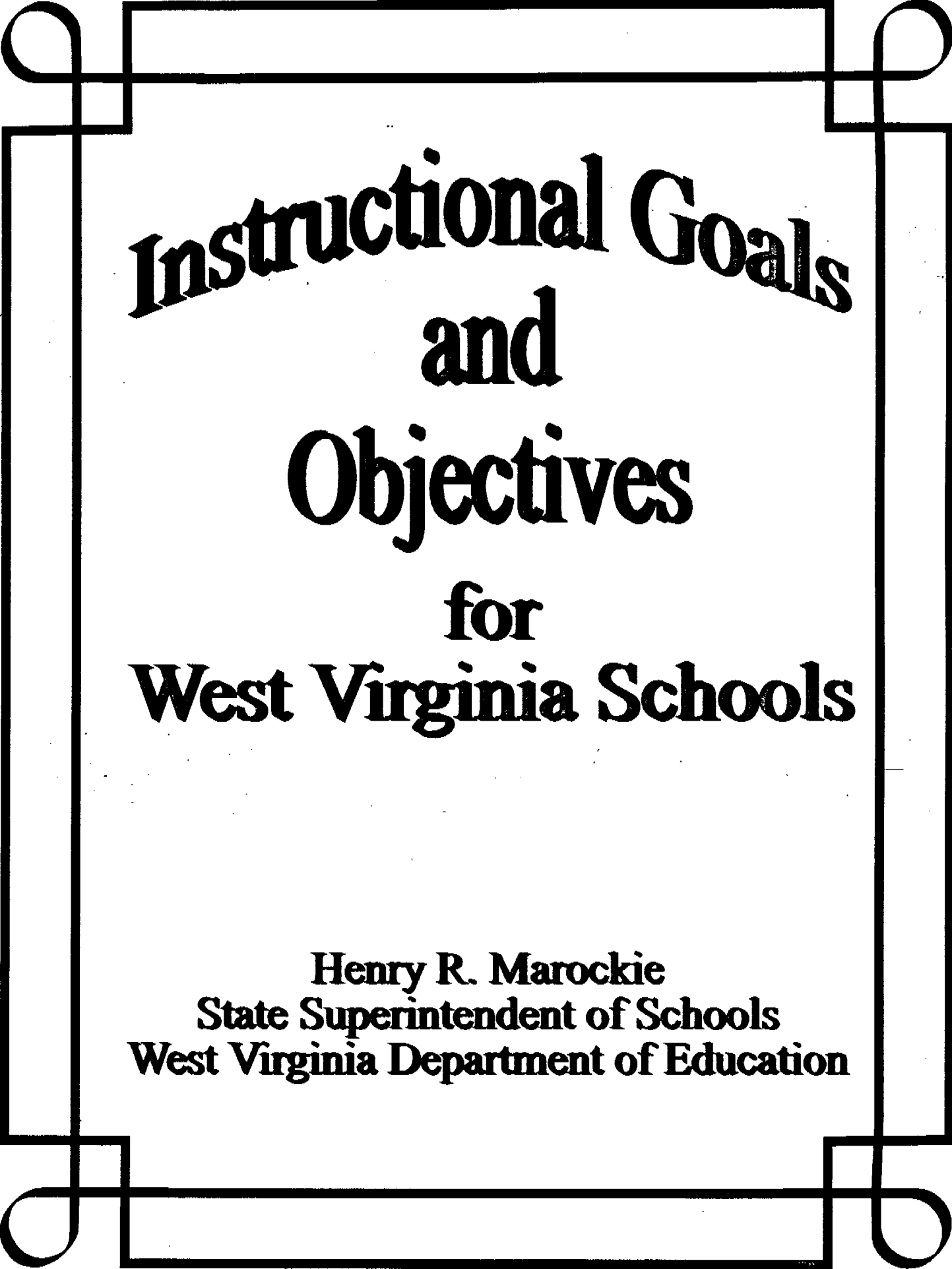
science and social studies. All of the new instructional goals and objectives will be compiled together into one document.

§126-44-3. Incorporation by Reference.

3.1. A copy of 126CSR44, Instructional Goals and Objectives for West Virginia Schools (Policy 2520), is attached. Copies may be obtained in the Office of the Secretary of State and in the West Virginia Department of Education, Office of Instructional Services.

§126-44-4. Summary of the Instructional Goals and Objectives.

4.1. Summary of the Instructional Goals and Objectives: The West Virginia Board of Education has the responsibility for establishing high quality educational standards pertaining to all education programs (W.Va. Code §18-9A-22). The instructional goals and objectives provide a focus for teachers to teach and students to learn those skills and competencies essential for future success in the workplace or in further education. The document includes: instructional goals for English language arts, mathematics, social studies, science, process/workplace skills; program charts for K-2, 3-4, 5-8, and 9-12; instructional practices for K-12; a document guide; instructional objectives that reflect a rigorous and challenging curriculum, the objectives assessed on the state standardized test, process/workplace objectives and computer/technology objectives for each grade level in each program of study.



Instructional Goals and Objectives for West Virginia Schools

**Henry R. Marockie
State Superintendent of Schools
West Virginia Department of Education**



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Foreword

The West Virginia Board of Education is pleased to present the Criteria of Excellence: Instructional Goals and Objectives for use in promoting student success throughout the state. Senate Bill 300 challenges all state educators to develop a school system that fosters higher student achievement by combining a rigorous academic program with a realistic understanding of work place expectations. To meet the mandate of this legislation, a partnership of teachers, principals, county administrators, college and university faculty, State Department of Education representatives, and business and community members collaborated in the production of this document.

English language arts, mathematics, science, and social studies are the four basic cornerstone subjects from which the total learning system of a school, county or state evolves. Mastery of grade level objectives in these core areas is essential for students' future success.

The process of developing a strong learning system begins with the clearly stated instructional goals and objectives contained in this document. These instructional goals and objectives are challenging and rigorous with content based on sound educational research. Educators on the county and school levels will use the goals and objectives contained in the Criteria of Excellence: Instructional Goals and Objectives to design innovative academic programs, select high quality instructional materials and provide targeted staff development.

Working together, educators, students, parents, and business leaders can secure a future full of promise and productivity for all children in West Virginia.



Henry Marockie
State Superintendent of Schools

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English Language Arts

Instructional Goals

The English Language Arts curriculum promotes student proficiency in understanding and expressing meaning. Today's global economy and technology-driven society demand people who can communicate, express, and exchange ideas in a variety of forms for different audiences and medias. All careers require people to use language to work individually and cooperatively; to analyze and interpret information; to solve problems; and to make decisions.

Students will study a wide range of classic and contemporary works to build an understanding of the culture and history of a democratic society. They will approach writing tasks systematically and will use the writing process appropriately. When they create text, they will apply knowledge of structure, study skills, editing, usage, spelling, and punctuation. Students must recognize connections among the English Language Arts. Growth in one of the English Language Arts areas will promote growth in the other areas.

Language

All students will make progress toward mastery of grammar, mechanics, and usage of standard English in their writing and speaking. They will master parts of speech, will determine relationships between and among those parts, and will correctly apply these rules for speaking and writing. Students will work individually and/or cooperatively to evaluate and edit material.

Listening/Speaking

Students will listen and speak effectively to exchange ideas and opinions for a variety of purposes, audiences, and medias. Strong listening and speaking skills ultimately enhance their personal, academic, and occupational lives. Many reading comprehension and literary appreciation skills are first learned through listening and speaking.

Spelling

Students will acquire vocabulary through spelling instruction. Students will spell and pronounce words correctly and will apply strategies to spell unknown words across the curriculum.

Reading

Initial reading instruction will emphasize learning to read by establishing the concept, sound, and structure of print. A transition will

then begin toward reading to learn. Students will use reading strategies that will assist them in achieving personal goals to succeed in society. Comprehension and critical reading skills are essential and will be developed through all grades by reading selections from various genres.

Study Skills

Students will work individually or as members of a team to acquire, integrate, store, and retrieve information from different sources. Research skills will be constantly taught and reinforced at all grade levels. Instruction will lead the student to complete oral and written presentations that exhibit interaction and consensus within a group. All study skills will provide the necessary competency for students to become lifelong learners.

Writing

All students will work toward error-free compositions with increasing command of the conventions of composition. These compositions will include narrative, informative, and persuasive writing. Students will use an appropriate writing process (pre-writing, drafting, revising, editing, and publishing) to express and communicate ideas. They will demonstrate continuous progress toward keyboarding, word processing, and writing legibly in penmanship.

Mathematics

Instructional Goals

The mathematics curriculum at all levels is currently undergoing significant change. Many of these changes have arisen as a response to the need to better prepare students for college, other post-secondary education, and gainful employment. Today's global and computer-driven society demands workers with thinking skills who can master new technologies, solve problems by employing a variety of strategies, and explain concepts and procedures based on mathematical reasoning. All students are to value mathematics, become confident in their ability to do mathematics, become mathematical problem solvers, communicate mathematically, and learn to reason mathematically.

Mathematical Problem Solving

Students in grades K-12 will become competent problem solvers. The incorporation of the problem solving process is a focus of all instruction in mathematics. Learners will work individually or cooperatively to investigate mathematical content, formulate problems, and solve problems using real-life data. Problem solving strategies include: modeling, making a list, estimating; guessing and checking; patterning; working backwards; using formulas; making and/or using tables, charts, and diagrams; brainstorming, and solving simpler problems.

Mathematical Communication

Students in grades K-12 will have multiple opportunities to develop communication skills in mathematics. Students will regularly reflect upon their learning, formulate conclusions, and express mathematical ideas. The students' understanding of mathematics will be clarified through reading, writing, speaking, and listening. Students will use the language of mathematics, including specialized vocabulary and symbols, to represent and describe mathematical ideas, generalizations, and relationships.

Mathematical Reasoning

The development of critical thinking skills is essential for a genuine understanding of mathematics. Students will regularly be asked to extend ideas, make conjectures, generalize, clarify by example, identify alternate problem solving strategies, and justify solutions. Students will apply deductive and inductive reasoning in a variety of problem solving situations. The student will recognize reasoning as a process that can grow out of every mathematical activity.

Mathematical Connections

Students will recognize connections among concepts and procedures within the various branches of mathematics and with other disciplines. Recognizing these connections reinforces the importance of the mathematical content.

Algebraic and Geometric Concepts

Algebraic and geometric concepts will be taught in all grade levels so that all students are well prepared for the requirement of Algebra and Geometry at the high school level.

Social Studies

Instructional Goals

Social studies at all levels integrate the social sciences and humanities to promote civic competence and participation. The curriculum should be dynamic in order to prepare students for a society where change is rapid and constant. The realities of a globally interdependent world require students to understand their historical roots and draw upon historical knowledge. Students must learn to solve problems facing their own communities as well as emerging global issues. The curriculum must provide opportunities for students to develop skills in making not only personal choices but also economic choices based on limited resources. Students need preparation to face persistent dilemmas in our democracy. All students need to be confident in their ability to be lifelong learners, to enter and adapt to a changing world of work and further the goals of democracy.

Civics and Government

Students in K-12 will develop competencies essential for informed, responsible, civic behavior. Instruction should allow students to understand the need for authority and government and the exercise of rights and responsibilities. Students must learn and practice intellectual and participation skills essential for an involved citizenry. This will involve articulating ideas, taking and defending positions, building coalitions, negotiating, compromising, seeking consensus, making decisions, and resolving problems. In order to develop these skills, the curriculum must extend beyond the school to include experiences in the workplace and service in the community.

Economics

Students will learn to make informed economic choices in a growing global economy through mastery of the economics objectives. Learners will investigate economic principles and their application to historical situations. Then learners will work cooperatively and individually to analyze how basic economic principles affect their daily lives by examining real problems and situations. The economic principles should include an understanding of scarcity and choice, productivity, markets and prices, supply and demand, competition, role of government, international trade factors, and consumer decisions.

Geography

Students will learn that geography is the science of space and place on Earth's surface through mastery of the geography objectives. Its subject matter is the physical and human phenomena that make up the world's environments and places. The students will be able to describe the changing patterns of places in words, maps, and geographics, to explain how these patterns come to be, and to analyze their meaning. The students' continuing quest is to understand the physical and cultural features of places and their natural settings on the surface of Earth.

History

Students in K-12, study history to gain a sense of order and time. Through understanding the results and consequences of human decisions and actions, students will develop historical concepts and will examine the past and its relationship to the present. Students will analyze how individuals, groups, and nations have shaped cultural heritages. Through the study of history, students will learn about states, nations, locations, settlements, formations, governments, economic developments, and cultural heritage. In order to develop a historical perspective, students must be challenged to see causal relationships, to evaluate problem solving techniques and to recognize the value of history in preparing for the future.

Science

Instructional Goals

Scientific literacy for all students is the fundamental goal of the science curriculum. All West Virginia children must be prepared to live and work productively in a highly scientific, technological world. Economic competitiveness is dependant on an educated, trained workforce that understands why and how things work. Students must learn to make evidence-based decisions in their personal lives and on societal issues. Drawing upon the National Science Education Standards, the goals of Project 2061, and the tenets of the Scope, Sequence, and Coordination Project, the science curriculum delineates what students must know, understand, and be able to do. Inquiry-based science instruction is emphasized throughout the K-12 curriculum.

Nature of Science

Students will develop an understanding of the nature of science which encompasses the understanding and the practice of scientific inquiry; the acquisition and the nature of scientific knowledge; and the comprehension of scientific endeavors.

Scientific Attitudes/Habits of Mind

Through cultivation of scientific attitudes (i.e., demand for verification, test for validation, display of curiosity), students will develop an understanding of the limits of science and to evaluate scientific advances and technological applications as they impact society. Through the participation in the scientific enterprise, students will construct their knowledge about the natural and designed world.

Scientific Processes/Thinking Skills

Students will develop and demonstrate the scientific processes for investigating the world. They will utilize critical thinking skills to make decisions based on evidence and employ appropriate strategies to solve problems. The processes of science used to construct knowledge not only help students find meaning in science, but also assist students in the development of important life management and work skills. Ample opportunities are needed for students to develop the scientific skills such as formulating questions; making predictions; designing experiments; making observations; classifying, organizing, and analyzing data; drawing conclusions; and evaluating results.

Laboratory Investigations/Hands-On Learning

Scientific inquiry is as a pathway to knowledge. Students acquire skills for learning and gain knowledge of the natural world from direct observation, interaction, and concrete manipulation of the tools and the materials of science. Students will engage in active inquiries, investigations, and hands-on activities a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills.

Science Themes and Subject Matter

Through the integration of the fields of science and the development of unifying themes, students will be able to see that interrelationships among biology, chemistry, physics, and the earth sciences. Scientifically literate students will make connections in the formal education setting and will apply their knowledge and skills to daily life experiences. Science themes - systems, changes, and models - provide students with unifying conceptual schemes that increase their understanding of the natural world.

Science History

Science is a human endeavor. Studying historical and current discoveries of scientists and scientific milestones provide students with information about how discoveries have influenced current scientific thought and advances. Scientifically literate students will realize the contributions of diverse cultures, past and present scientists and society in general.

Science, Technology, and Society

Understanding science and technology in the context of personal and social perspectives are critical issues in preparing students to take an active and responsible role in society. To live and work in the highly scientific and technological world of the twenty-first century, students must be able to identify problems and design, implement, and evaluate solutions. Students must comprehend the inherent link between science and technology and their impact on society.

Process/Workplace Goals

In addition to the core academic areas of English language arts, mathematics, science and social studies, six key areas of process skills have been identified. These are essential skills students need for successful entry into work or post-secondary education. The ability to solve problems, communicate successfully, work with others, apply sound judgement, establish clear objectives for advancing career interest and utilize technology to assist with specific tasks. Throughout the 7 - 12 curricula the ◊ mark those academic learning objectives that particularly lend themselves to the development of process skills. The instructional practices section of this document also incorporates practices that support the development of these skills. The six goals are as follows:

Problem Solving

These process skills reflect one's ability to organize, plan, reason, and use information to solve problems. Time management; the ability to prioritize; understanding cause and effect relationships; and evaluating, summarizing, and communicating information are skills embedded throughout the core subjects K-12.

Communication

Effective communication is fundamental to achieving a desired result whether in the workplace or advancing one's education. The goal is to communicate effectively both orally and in writing. Correct grammar, punctuation, spelling and an extensive vocabulary equip students to deal effectively with various audiences, publics and individuals. Listening is also a significant skill in the area of communication.

Working With Others

The development of these skills gives the individual the ability to: function in both leadership and non-leadership roles, to deal with conflict effectively, to motivate individuals or teams of people, to understand the concept of "customer service", to participate in work-related decisions and acknowledge the contributions of others.

Technology

The ability to understand and utilize technology to solve problems is a mandate in today's world. Students will learn to: set-up and operate computer equipment and assorted peripherals, use on-line sources to obtain or exchange

information; select and use multiple software packages; and demonstrate skills in the use of word processing, databases, spread sheets, graphics and telecommunications.

Self Management

Students will acquire the attributes of motivation, promptness, perseverance, honesty and reliability in word and action. Well developed self management skills also reflect pride in work effort, attention to detail and accuracy and a focus on personal wellness and grooming.

Career Development

This area establishes a process to assist students in planning and preparing for a career. The formal initiation begins at the end of eighth grade when the student, the parents, and counselor begin assessing and discussing the students career interest and choose some corresponding career clusters to be explored in grades nine and ten. Upon completion of the tenth grade, students, parents and the counselor select a career major. Flexibility for changing clusters and majors remains throughout. Another objective is to assist students in developing and reviewing career goals and plans, to evaluate personal interest and aptitudes, to master skills needed to prepare job applications, resumes, cover and follow-up letters and to speak with confidence and composure about one's own skills and qualifications in an interview setting. A culminating step in the area of career development is the workplace experience that all students will have during ninth through twelfth grades.

Process/Workplace Objectives

Although these objectives are reflected throughout the core subjects K-12 and identified with a ◊ in grades 7-12, a listing of highly focused process skill objectives provides additional guidance for teachers in developing experiences and opportunities for students. These objectives may also be used by the school and employer to determine if the workplace experience merits awarding unit(s) of credit.

Problem Solving

- PW.1 systematically analyze the component parts of a given situation or process and then plan, organize, and implement a concept to improve that situation or process
- PW.2 given a set of rules, directions, or instructions, apply them to solve a problem or accomplish a task
- PW.3 given multiple tasks, prioritize them according to importance and prepare a time frame and schedule to accomplish the tasks
- PW.4 identify and analyze a problem by stating causes and effects
- PW.5 given an event or activity, identify the resources needed and develop a plan of action
- PW.6 provided several sources of information relative to the workplace assignment, evaluate the information for reliability, completeness and applicability
- PW.7 establish a procedure and method for maintaining and retaining information relative to the workplace assignment
- PW.8 demonstrate an understanding of oral, visual, and written information by summarizing it and following through with appropriate action

Communication

- PW.9 use correct grammar when speaking and writing
- PW.10 use correct punctuation, spelling, vocabulary and grammar in all written work
- PW.11 given a situation or circumstance, take a position and communicate ideas to justify the position
- PW.12 compose correspondence for a variety of audiences that is grammatically correct, easily understood, and reflects all necessary information
- PW.13 using multi-media, prepare an oral presentation that has a specific message, that is effective and then alter the

presentation for a different audience

- PW.14 perform a task after listening to oral information
- PW.15 use active listening and observation skills to understand the positions of others, and use verbal and nonverbal cues from others to communicate effectively in return

Working With Others

- PW.16 understand what it takes to develop an effective team, including team rules, behavior norms, team roles, communications, and decision-making practices
- PW.17 given an assignment with two or more individuals, use encouragement, persuasion, motivation, and other effective communication skills to complete the assignment
- PW.18 perform effectively in both leadership and non-leadership roles
- PW.19 placed in situations of conflict, demonstrate ability to mediate and resolve the conflict
- PW.20 analyze verbal and non-verbal communication from others involved in a given situation or process (e.g., supervisors, peers, customers) then take appropriate action
- PW.21 provide effective, corrective, and positive feedback to others in the appropriate situation
- PW.22 given a complaint, understand the appropriate policies and practices for dealing with the situation and take appropriate action
- PW.23 understand the different functional areas in an organization (such as represented in an organizational chart) and clearly identify the role assumed by each area and the relationship each role has to the total organization
- PW.24 be able to participate effectively in making group decisions, and be able to support those decisions to measure progress and take actions to meet those goals

- PW.25 given a circumstance where there is a difference of opinion, demonstrate the ability to recognize those differences and work toward a consensus

Technology

- PW.26 demonstrate the ability to set up computer equipment
- PW.27 demonstrate the ability to operate computer equipment
- PW.28 demonstrate the ability to obtain and exchange information by using on-line sources
- PW.29 demonstrate the ability to select and use multiple software packages for specific purposes
- PW.30 demonstrate the ability to use word processing
- PW.31 demonstrate the ability to create and use databases, spreadsheets, and graphics
- PW.32 demonstrate the ability to use telecommunications
- PW.33 given a problem, assignment, or task, select and use the appropriate technology and procedures for a resolution or solution

Self Management

- PW.34 understand what is expected of a person in a given situation or process, and be able to clarify, modify, and/or meet those expectations
- PW.35 be punctual with appointments and completion of work assignments, and be able to handle appropriately unavoidable delays
- PW.36 stay with an assignment or task to completion
- PW.37 demonstrate self-motivation
- PW.38 work independently without direct supervision
- PW.39 take steps appropriate to developing or implementing new ideas or concepts to improve a given situation or process

- PW.40 choose ethical courses of action and exhibit honesty and reliability in words and action

- PW.41 given a fixed amount of funds, create a budget and demonstrate the ability to balance the amount of funds that are deposited and withdrawn

- PW.42 dress appropriately to maximize personal effectiveness and safety in various settings (e.g., work, school, community functions)

- PW.43 demonstrate sound safety practices and respond appropriately to emergencies

- PW.44 be able to check the details and quality of one's work and to take action to correct mistakes

Career Development

- PW.45 establish career clusters and majors with the guidance of parents and counselors at the end of eighth and tenth grades taking into consideration self assessment and career assessment data (e.g., ACT Explore)

- PW.46 identify multiple career options and establish goals toward the pursuit of the selected career path

- PW.47 prepare a job or college application, résumé, and write appropriate cover and follow-up letters

- PW.48 practice interview strategies concentrating on speaking clearly and correctly, speaking with confidence about one's own skills and qualifications as they relate to the specific situation

- PW.49 provide community service and assesses entrepreneurial opportunities that exist within the community, the region, the state or the nation.

- PW.50 discuss with the workplace supervisor the legal and labor issues associated with the job assignment (e.g., ninth through twelfth grade students)

Early Childhood K-2

These core programs of study shall be taught daily with a reteach component ensuring mastery of the instructional objectives. Reteaching is to occur daily for those students needing more help.

English Language Arts Mathematics

These required programs of study may be taught as separate or integrated programs but need not be taught daily.

Science Social Studies Art Music Physical Education Health

Components of career awareness and the application of technology shall be included during instruction in all subjects.

Students demonstrating mastery of instructional grade level objectives in the programs of study are to be provided the opportunity to advance to the next grade level objectives.

Early Childhood 3-4

These core programs of study shall be taught daily with a reteach component ensuring mastery of the instructional objectives. Science and Social Studies may be taught as separate or integrated programs. Reteaching is to occur daily for those students needing more help.

English Language Arts
Mathematics
Science
Social Studies

These required programs of study may be taught as separate or integrated programs but need not be taught daily.

Art
Music
Physical Education
Health

Components of career awareness and the application of technology shall be included during instruction in all subjects.

Students demonstrating mastery of instructional grade level objectives in the programs of study are to be provided the opportunity to advance to the next grade level objectives.

Middle Childhood 5-8

These core programs of study shall be taught daily with a reteach component ensuring mastery of the instructional objectives. Schools implementing alternative schedules will provide equivalent instructional time for these programs of study.

English Language Arts Mathematics Science Social Studies

These required programs of study shall be taught at each grade level each year as separate subjects.

Art Music* Physical Education Health

These required programs of study shall be taught annually.

Career Exploration Developmental Guidance*** Foreign Language******

Career awareness and the application of technology shall be taught in all programs of study. Students demonstrating mastery of instructional grade level objectives in the subjects are to be provided the opportunity to advance to the next grade level objectives.

* Choral and instrumental music must be offered no later than grade six.

** These experiences based on instructional goals and objectives must be provided to students during grades seven or eight beginning the fall of 1998, and may be integrated or taught as a separate course. Where feasible, consideration should be given to using modular technology education labs to enhance career exploration.

*** This may be integrated or taught as a separate course.

**** Beginning the fall term of 1998, all counties are encouraged to offer two years of foreign language for students in grades seven and eight. Beginning the fall of 2002, all counties will be required to offer two years of foreign language for students in grades seven and eight.

Elective offerings not based on West Virginia Board of Education Instructional Goals and Objectives must have written goals and objectives approved by the county board of education.

Adolescent 9 - 12

These graduation requirements for grades 9 - 12 become effective for students entering grade 9 in the 1999 - 2000 school year.

Requirements for Graduation

English Language Arts

4 courses

English 9, 10, 11, 12

Mathematics*

3 courses

Two of the three credits will be Algebra I and above.

Science

3 courses

Coordinated and Thematic Science 9, Coordinated and Thematic Science 10, and one course above Coordinated Thematic Science 10 level.

Social Studies

3 courses

United States to 1900, World Studies to 1900, and Twentieth Century

Physical Education/Wellness

1 course

Health

1 course

The Arts

1 course

Career Majors**

4 courses (Career majors are to be determined at the local school or county level.)

Electives

4 courses (chosen from the school's offerings of electives)

Work-based Learning***

(Work-based Learning will be determined at the local level.)

Credits for these courses are to be awarded based upon demonstrated mastery of the instructional objectives.

Students demonstrating mastery of instructional grade level objectives in the subjects are to be provided the opportunity to advance to the next grade level objectives.

* Successful completion of the objectives for Applied Math I and II is equivalent to an Algebra I credit. Applied Geometry may be substituted for a formal course of geometry.

** Prior to students selecting career majors, opportunities for career decision making orientation must be provided.

*** The decision regarding credit for the experiences at grades 9 - 12 will also be made at the local level.

All students are strongly encouraged to complete two courses in a foreign language.

Elective offerings not based on West Virginia Board of Education Instructional Goals and Objectives must have written goals and objectives approved by the county board of education.

Core Electives

Adolescent 9-12

ENGLISH LANGUAGE ARTS, MATHEMATICS, SCIENCE AND SOCIAL STUDIES

English Language Arts

Drama
Theater
Journalism
Mass Media
Television
Film
Speech
Creative Writing
Technical Writing
Desk Top Publishing
AP English
English College Courses

Mathematics*

Applied Mathematics I*
Applied Mathematics II*
Geometry/Applied Geometry*
Algebra II*
Trigonometry
Probability and Statistics
Pre-Calculus
Discrete Mathematics
Algebra/Geometry Preparation
Algebra Support
AP Mathematics
Mathematics College Courses

Science**

Biology Eleven/Twelve
Chemistry Eleven/Twelve
Chemistry - Technical/Conceptual
Environmental Earth Science
Eleven/Twelve
Human Anatomy & Physiology
Physics Eleven/Twelve
Physics - Technical/Conceptual
AP Science
Science College Courses

Social Studies

Civics/Government***
Economics***
Geography
AP Social Studies
Social Studies College Courses

Indicates math courses required to be offered. Schools must offer four courses in mathematics at a level above Algebra I.

A minimum of one advanced course for each of the four fields of science (Biological Sciences, Chemistry, Environmental Earth Sciences, and Physics) must be offered.

Required to be offered.

Elective offerings not based on West Virginia Board of Education Instructional Goals and Objectives must have written goals and objectives approved by the county board of education.

Non-Core Electives 9-12

The instructional objectives for these electives will be submitted to the State Board for approval within the next six months.

The Arts

Electives must be offered to accommodate four sequential levels of student achievement in music (both instrumental and choral) and visual art (general art and/or studio art). Electives must be offered in at least one level of student achievement in dance and theatre beginning with the 1998-99 school year. Electives must be offered to accommodate four sequential levels of student achievement in dance and theatre beginning with the 2001-02 school year. Additional elective offerings may be made available based upon student need and interest.

Career Clusters and Majors

Career cluster options must be made available to students to ensure that students understand the breadth and scope of careers in the world of work. Required career major courses and required electives within the majors will be determined by county boards of education. Career majors must reflect, where appropriate, professional, skilled, and entry level components.

Driver Education

A minimum of one course must be offered.

Family and Consumer Science

Two elective offerings which include instructional goals and objectives that teach parenting skills to meet the stipulations of West Virginia Code §61-8-9A must be offered.

Foreign Language

A minimum of two levels of one foreign language will be required to be offered. Languages to be offered will be determined by county boards of education.

Health

Elective offerings may be made available based upon student need and interest.

Physical Education

Elective offerings may be made available based upon student need and interest.

Note: Elective offerings not based on West Virginia Board of Education Instructional Goals and Objectives must have written goals and objectives approved by the county boards of education.

Kindergarten - Twelve

Instructional Practices

- IP.1 continually monitor students' daily work, provide feedback to students on progress, and reteach skills before introducing new ones
- IP.2 provide opportunities for students demonstrating grade level mastery of skills to advance to the next grade level of skills
- IP.3 include in the structure of the lesson preteaching, reviewing of prerequisite learning, sharing the objectives, presenting new material in small steps with practice after each step and checking for understanding; then after initial instruction provide guided practice under direct teacher supervision, assign homework to reinforce classroom learning, and conduct periodic reviews
- IP.4 increase time for teaching and learning by establishing rules, procedures and consequences and communicating them to students; enforcing behavioral expectations consistently and uniformly; planning lessons well in advance; reducing transition time between lessons and activities; setting an appropriate pace in teaching the lesson; giving students alternate or ongoing assignments; using "self-instructional" activities; giving additional work that builds desired skills; and making instructions focused and clear
- IP.5 match instructional methodologies to learning styles; differences in students' achievement levels; and emotional, social, and physical characteristics of students
- IP.6 encourage students to think systematically, critically, and analytically about issues and events by using effective questioning techniques and other strategies (e.g., the Socratic method, "what if" questions, graphic organizers, creating a time capsule, human timeline, or opinion continuum)
- IP.7 make teaching student-centered, utilizing a variety of participatory strategies and materials. (e.g., cooperative learning, role playing, small group exploration, manipulatives, calculators)
- IP.8 provide feedback to students on homework assignments through grades, comments, and/or discussion
- IP.9 establish a grading procedure that reflects assessment of the required instructional objectives; passing status is not to be awarded through extra credit; a variety of assessments may be used in determining grades (e.g., teacher-made tests, research projects, performance assessments, presentations)
- IP.10 use a variety of print sources in teaching, practicing, and extending concepts (e.g., primary historical documents, literature, current periodicals, technical manuals, Internet, reference materials)
- IP.11 incorporate writing into all curricular areas with essays, diaries, journals, logs, research papers, position papers, poetry, fiction, newspaper articles, letters
- IP.12 encourage students to engage in presentations to their peers and to adults in such activities as debates, panel discussions, mock legislatures, model United Nations, Social Studies and Science Fairs, press conferences, plays, oral interpretation of prose, or poetry and student produced videos. Give students practice in communicating their knowledge and in expressing and accepting feedback both positive and negative
- IP.13 show students linkages among all the subject areas by organizing theme-oriented projects, by co-teaching with a colleague, and/or by integrating skills from other content areas (e.g., data collection and graphing in a social studies assignment, journal writing as part of a chemistry experiment)
- IP.14 provide constant opportunities for students to use classroom knowledge and skills in addressing local, national, and international issues; and give students the opportunity to correspond and interact with adults from the community, national and international pen pals, and citizens from other countries
- IP.15 teach students how to work effectively on a team by assuming both leadership and non-leadership roles, by understanding differences of opinion, by dealing appropriately with conflict, and by motivating and acknowledging others' contributions
- IP.16 help students understand their individual roles in larger organizations (e.g., team,

class, school) as active participants in decision making, accepting supervision, and cooperating with authority. Provide practice in effective work habits as part of instruction and assist students in realizing that it is their job to learn, so that students become "workers" in their own education

IP.17 use classroom management techniques (e.g., in the formulation of rules and procedures) to foster cooperation, self-control, independence, perseverance, honesty, and reliability in word and action in students. Recognize the potential of each individual learner and his/her worth as a human being; model for students what is expected of them

IP.18 build skills and encourage attitudes in students which will lead to life-long learning

by setting goals, reading independently, researching, assessing one's own progress, and developing pride in a high quality of work

IP.19 teach the state identified instructional objectives using appropriate correlated material

IP.20 alternate instructional strategies within each lesson and use computers and other technologies to provide creative instructional opportunities in all subjects for students individually and in groups

IP.21 integrate and interrelate academic and technical content when appropriate

IP.22 work and plan with other teachers and use professional judgements in delivery classroom instruction

Document Guide

- ▶ **Boldface font** indicates the objectives that will be assessed on the state standardized test.
- ▶ Subscripted numerical notations (6.28_{7,8}) indicate the objective will be assessed at additional grade level(s).
- ▶ ◇ notation indicates the objective is a workplace readiness skill.

Kindergarten

English Language Arts

The kindergarten student will be immersed in a language rich environment to develop oral language skills and appreciation for the English Language Arts. Kindergarten teachers will engage students by providing them opportunities to participate in meaningful activities and roles throughout the entire curriculum where the English Language Arts are the foundation for all learning. The English Language Arts will challenge students to extend and to elaborate upon what others have said, developing higher-order thinking skills.

Listening/Speaking

- K.1 listen to a variety of literary forms, including stories and poems
- K.2 participate in choral speaking, reciting poems, rhymes, songs, and stories with repeated patterns and creative dramatics
- K.3 use words to describe/name people, places, things, and number words
- K.4 use words to describe actions
- K.5 restate and follow one-step and two-step directions
- K.6 follow implicit rules for conversation (e.g., taking turns, staying on topic, utilizing communication technologies)
- K.7 use appropriate voice level, phrasing, sentence structure, and intonation in speaking
- K.8 participate in discussions about learning
- K.9 differentiate between a word and a sentence
- K.10 substitute words in a rhyming pattern
- K.11 identify high, low, near, far, soft, and loud sounds
- K.12 hear, say, and manipulate phonemes of spoken language (e.g., divide words into phonemes and blend phonemes into words)
- K.13 demonstrate appropriate listening behaviors (e.g., resist distractions, stay alert, hands/feet quiet, eyes on speaker, take responsibility for success of communication)

Reading Comprehension

- K.14 read literary work by national and

international authors to include, but not to be limited to: fairy tales, science fiction, tall tales, and poetry

- K.15 use one-to-one correspondence
- K.16 use eye/hand coordination
- K.17 use left to right progression
- K.18 recognize likenesses and differences in objects, pictures, and designs
- K.19 match similar objects
- K.20 classify objects and pictures
- K.21 recognize upper and lower case letters of the alphabet and their sounds
- K.22 reproduce, from auditory clues and memory, lower and upper case letter symbols
- K.23 recognize and match pictures with the same consonants/sounds in initial word positions
- K.24 recognize sound-letter correspondence including beginning consonants, two-letter consonant blends, and two-letter consonant digraphs—all in the initial word positions
- K.25 recognize and match two-letter consonant blends in initial word positions
- K.26 recognize and match two-letter consonant digraphs in initial word position
- K.27 recognize and reproduce own name
- K.28 recognize colors and color names
- K.29 comprehend concept of positional words (e.g., above, behind, between)
- K.30 understand the concept of a story (e.g., beginning, middle, end)

- K.31 recognize real and unreal
- K.32 recognize and use rhyming words
- K.33^{1,2,3,4,5,8,9} **determine sequence of events**
- K.34 **complete sentences by choosing correct picture for meaning with beginning letters supplied**
- K.35 **understand concepts of past, present, and future**
- K.36^{2,3,4,5,6,9,11} **predict situations that might occur based upon text of a story**
- K.37^{2,3,4,5,6,7,8,9,11} **understand and relate to feelings of characters in a story**
- K.38^{1,2,3,4,5,6,7,8,9} **understand and identify the main idea in a story**
- K.39^{1,2} **use illustrations and oral text to comprehend both literally and interpretively**

Reading Vocabulary

- K.40 participate in discussions about learning to include appropriate voice level, phrasing, sentence structure, and intonation
- K.41 recognize colors and color names, positional words, and rhyming words

Writing

- K.42 use directionality (e.g., left/right, top/bottom, up/down)
- K.43 use dominant hand with correct paper position
- K.44 hold pencil correctly
- K.45 assume and maintain appropriate posture
- K.46 use appropriate stroke formation
- K.47 print upper/lower case letters correctly
- K.48 align writing (e.g., keeps on baseline)
- K.49 uses uniform spacing between letters and words
- K.50 demonstrates uniformity when writing letters
- K.51 write numerals 0-9 correctly
- K.52 evaluate handwriting
- K.53 begin to use the five steps for process writing (e.g., prewrite, draft, revise, edit, and publish) to begin forming words, phrases,

- and/or sentences
- K.54 use electronic editing tools and traditional editing strategies for words not detected by electronic tools in computer generated work (e.g., proper nouns, in and inn [homophone])

Spelling

- K.55 recognize and differentiate among initial and final sounds
- K.56 reproduce designs, shapes, numerals, letters, etc. accurately in a predetermined sequence
- K.57 produce the graphic symbols for consonant sound spellings

Language

- K.58^{1,2,3,4,5,6,7,8,9,10,11} capitalize months of the year, days of the week, names of people, first word in a sentence, and the pronoun "I"
- K.59^{1,2,3,4} comprehend and identify correct uses of punctuation: period, question mark, and exclamation point

Study Skills

- K.60 acquire organizational skills to manage school materials and personal time management
- K.61^{3,4,6,7,9,11} become familiar with reference sources (e.g., dictionary/glossary, encyclopedia, newspapers)
- K.62 interpret information from graphic sources (e.g., charts, graphs)
- K.63 become familiar with test-taking strategies (e.g., listen closely, make careful choices, do your best)

Computer/Technology

- K.64 use appropriate software to practice and master Kindergarten English language arts instructional objectives
- K.65 on a keyboard, use the letters of his/her name and/or numbers to "Log On"
- K.66 on a keyboard, use special function keys such as "Return/Enter, space bar, and Esc"

- K.67 select a program from a menu
- K.68 use a mouse to "point and click"
- K.69 identify the uses of technology at work and play

- K.70 identify various components of a computer (e.g., monitor, keyboard, CPU, disk drive, printer, etc)

Kindergarten Mathematics

The Kindergarten objectives emphasize the use of manipulatives, concrete materials, and appropriate technology so that students explore and develop ideas that are fundamental to the study of mathematics: number, counting, ordering, comparing, classifying, patterning, shape, size, position, numeration, measuring, and problem solving. The emphasis is on experience and growth in mathematics.

Number Theory and Number Sense

- K.1 count forward to 100 and backward from 10 with and without objects
- K.2 given a set containing ten or fewer concrete items: tell how many are in the set; select the corresponding numeral from a given set; trace over the numeral using tactile materials; identify and describe one set as having more or fewer or the same number of members as the other set, using the concept of one-to-one correspondence; identify one more and one less than a given number; identify missing numbers in a sequence
- K.3 recognize patterns of counting by fives and tens, using concrete objects and/or a calculator
- K.4 given an ordered set of three objects, indicate the ordered position of each item, from left to right, right to left, top to bottom, and bottom to top
- K.5 determine the value of a collection of pennies whose total value is less than twenty cents
- K.6 estimate the number of objects in a group of twenty or less and count to determine the reasonableness of the estimate
- K.7,1,2 identify ordinal positions first through tenth

Fractions and Decimals

- K.8 participate in experiences that demonstrate a need for using fractions (e.g., sharing a graham cracker)
- K.9 identify and name halves and wholes using concrete models

Whole Number Operations and Computations

- K.10,1 model addition and subtraction of whole numbers with a total of twelve or less using objects, using a number line, by counting-on, or writing the corresponding number sentence
- K.11, use addition and subtraction of whole numbers in one and two step problems

Patterns and Relationships

- K.12 sort and classify objects according to similar attributes (e.g., number, size, shape, thickness, and color)
- K.13,2 identify, describe, and extend a pattern found in common objects, sounds, and movements
- K.14 develop and justify own rules for classifying a group of objects

Geometry and Spatial Sense

- K.15 use physical materials to construct, identify, and classify basic geometric shapes: circle, triangle, square, and rectangle
- K.16 identify basic geometric shapes in

- the environment
- K.17_{1,2,3,4} identify representations of plane geometric figures (circle, triangle, square, rectangle) regardless of their position and orientation in space
- K.18 describe spatial relationships: inside/outside, top/bottom, before/after, over/under, and left/right
- K.19 estimate the number of objects needed to fill an empty space
- K.20 identify the separate parts used in making a whole object

Measurement

- K.21_{1,2} estimate the size of an object and compare objects with respect to a given attribute (e.g., length and weight)
- K.22_{1,2,3,4,5,6,7,8} use standard and non-standard units of measure to find the length of an object
- K.23 order sets of objects by length
- K.24_{1,2,3,4} compare two objects or events, using direct comparison and nonstandard units of measure according to one or more of the following attributes: length, height, weight, temperature and volume. (Examples of non-standard units include: foot length, hand span, pencil, paper clips, blocks, etc)

- K.25 name the days of the week and the seasons of the year
- K.26 read time to the nearest hour using both an analog and digital clock
- K.27 identify penny, nickel, dime, quarter, and dollar

Probability and Statistics

- K.28 collect and organize data as a group project
- K.29_{1,2,3,4} construct graphs using objects and pictures

Computer and Technology

- K.30 use appropriate software to practice and master Kindergarten instructional objectives in mathematics
- K.31 on a keyboard, use the letters of his/her name and or numbers to "Log On"
- K.32 on a keyboard, use special function keys such as "return/enter, space bar, and esc"
- K.33 select a program from a menu
- K.34 use a mouse to "point and click"
- K.35 identify the uses of technology at work and play
- K.36 use a calculator to count by fives and tens
- K.37 identify various components of a computer (e.g., monitor, keyboard, CPU, disk drive, printer, etc)

Kindergarten Social Studies

The kindergarten objectives include an introduction to the lives of interesting people in history. Basic concepts involving historical time sequence, geographic direction, and economic choices are integrated in the program of study. The social studies program begins the formal introduction of what constitutes a good citizen of the United States. Citizenship education will include the importance of following rules and of respecting the rights of people. The program includes the concepts of self-control, honesty, courage, justice, and leadership. The objectives for elementary West Virginia social studies may be integrated throughout the K-4 curriculum.

Civics

- K.1 demonstrate an understanding that being a good citizen involves taking turns and sharing, taking responsibility for doing daily chores, taking care of personal things (pencils, clothing, books), and showing respect for what belongs to others
- K.2 identify examples of honesty,

- opportunity to participate in patriotic activities such as reciting the Pledge of Allegiance and standing for the National Anthem
- K.4 identify the need for rules, authority figures, and the consequences for breaking rules; practice conflict resolution
 - K.5 explain the importance of safety precautions in everyday life
 - K.6 explain why citizens voluntarily contribute their time and talents to the community
 - K.7 identify situations in which rules and leadership are needed
 - K.8 demonstrate appropriate behaviors and expectations in school-related experiences
 - K.9 evaluate likely consequences of school-related behaviors and expectations to determine if actions are responsible or irresponsible

Economics

- K.10 identify occupations within the local community
- K.11 identify economic concepts, including the difference between basic needs (e.g., food, shelter, and clothing) and wants (luxuries), the exchanging of money for goods and services, and examples of saving money for the future

Geography

- K.12 given locations on the United States map, demonstrate knowledge of left/right and up/down by placing colored stars appropriately in response to teacher instructions
- K.13 given a United States map, identify land masses versus bodies of water
- K.14 compare and contrast characteristics of life in the city and country

- K.15 identify community symbols (e.g., traffic signs, traffic lights, street and highway markers) and map symbols (e.g., legend references to land, water, roads and cities)
- K.16 name the days of the week
- K.17 name the four seasons and describe the characteristics of each season

History

- K.18 explore the past through stories of people, pictures, songs, holidays, customs, traditions, and legends
- K.19 sequence time, space, people, and events as they relate to the student's own life
- K.20 begin to identify sources of information to answer questions
- K.21 build a sense of empathy toward other times and cultures

Study Skills

- K.22 collect, organize, and present data in physical form (e.g., symbols, pictures, graphs, charts, tables)

Computer/Technology

- K.23 use appropriate software to practice and master kindergarten instructional objectives in social studies
- K.24 on a keyboard, use the letters of his/her name and/or numbers to "Log On"
- K.25 on a keyboard, use special function keys such as "Return/Enter, space bar, and Esc"
- K.26 select a program from a menu
- K.27 use a mouse to "point and click"
- K.28 identify the uses of technology at home and play
- K.29 identify various components of a computer (e.g., monitor, keyboard, CPU, disk drive, mouse, printer)

Kindergarten Science

The Coordinated and Thematic Science (CATS) Kindergarten objectives emphasize the process skills. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy in the fields of biology, chemistry, physics, and earth sciences. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of the major science themes of systems, changes, and models. Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. CATS Kindergarten enhances the child's natural curiosity about the environment and augments the awe and wonder of inquiries and discoveries using the senses and by hands on manipulation of objects to build a strong foundation of concepts blended with safety principles.

Nature of Science

- K.1 perceive science as the human's search for an understanding of the world by asking questions about themselves and their world (e.g., make qualitative observations about one's own physical characteristics, recognize arms, legs, head, eyes, ears, etc., make observations about things found in nature, clouds, animals, plants, etc., compare size, shape, and structure of living things)
- K.2 define science as a search for answers about themselves and their world (e.g., recognize the roles of people involved in science careers)
- K.3 explore objects and events (e.g., make qualitative observations using the five senses, identify changes in nature)
- K.4 probe deeply into natural phenomena by asking and answering questions about the environment (e.g., animals, plants, stars, weather)
- K.5 use a variety of communication techniques (e.g., pictures, models, graphs)
- K.6 realize that science is never finished by observing changes in the environment (e.g., weather cycles, plant and animal cycles)
- K.7 recognize that a solution to one scientific problem often creates new problems (e.g., recycling)

Scientific Attitudes/Habits of Mind

- K.8 ask and answer questions to further an appreciation and joy of discovery of the natural world
- K.9 demonstrate innate curiosity, initiative, and creativity by asking questions about the environment (e.g., day/night, weather conditions, living things)
- K.10 be in awe and wonder of the patterns, variations, and interactions of natural objects in the environment (e.g., tree, leaves, animal structures, sun and shadow)
- K.11 trust observations and accept results of personal discoveries (e.g., use five senses)
- K.12 listen to and be tolerant of different viewpoints (e.g., working in groups, communicate what is perceived)
- K.13 continue probing phenomena until questions are resolved (e.g., properties of living and non-living things, effects of weather)
- K.14 regard science as an integrated whole and a part of daily life
- K.15 recognize that scientists work alone and in groups (e.g., visit scientists at work, work in groups to make simple models)

Scientific Processes/Thinking Skills

- K.16 develop observational skills (e.g., use of senses)

- K.17 collect and record information in a variety of ways (e.g., drawings, weather calendar, graphs)
- K.18 use a variety of classification systems (e.g., sorting by color, shape, size, texture)
- K.19 make predictions based on personal observations (e.g., clouds-rain, cold weather-snow, bud-flowers, metamorphosis of butterflies)
- K.20 use mathematical skills in investigations (e.g., ordering, sequencing, counting, measuring)
- K.21 participate in drawing conclusions and making decisions
- K.22 use decision making skills in daily life (e.g., selecting clothes for weather conditions)

Laboratory Investigations/Hands-On Learning

- K.23 engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and laboratory skills
- K.24 use scientific instruments and everyday materials to investigate the natural world (e.g., hand lens, metric ruler, balance, thermometer, magnets, computers)
- K.25 use safe and proper techniques for handling, manipulating, and caring for science materials (e.g., follow safety rules, maintain a clean work area, treat living organisms humanely)

Science Themes and Subject Matter

- K.26 develop an understanding of the scientific themes of systems, changes, and models (e.g., systems are made of parts which interact with one another; change occurs gradually, repetitively, or randomly; models are representations of real things)
- K.27 understand that the study of living and non-living things in the

- natural world integrates living organisms, earth materials, and physical properties of matter
- K.28 establish connections across the curriculum (e.g., integrate science with mathematics, social studies, language arts, arts, and/or physical education)
- K.29^{3,4,5} compare, sort, and group objects according to size, shape, color, weight, texture and buoyancy-*systems*
- K.30^{3,4,5,6} using the five senses, identify living and non-living things-*systems*
- K.31^{3,4,5,7,9} observe water can be a liquid or a solid (e.g., rain, snow)-*changes*
- K.32 observe the properties of plants and animals (e.g., movement, growth)- *systems*
- K.33^{3,4,5,6,7} observe changes in plants and animals (e.g., animal baby to adult, seed to plant)- *changes*
- K.34^{3,5,7,9} observe models of plants and animals in different environments (e.g., terrariums, aquariums, animals and plants in a forest, pond, field)- *models*
- K.35 understand the terms hot and cold, warm and cool- *systems*
- K.36⁵ demonstrate that heat can be created by rubbing hands together- *systems*
- K.37^{3,5,6,8,10} discover magnetic properties of objects- *systems*
- K.38 recognize the effects of energy on the environment (e.g, light, heat)- *systems*
- K.39 observe the effects of gravity (e.g., objects)- *changes*
- K.40^{3,5,6,8,10,11} observe various particle sizes (e.g., crushing a sugar cube)- *changes*
- K.41 explore changes in energy (e.g., hot/cold, light/dark, loud/soft)- *changes*
- K.42 show that objects can be moved in different ways (e.g., straight, circular, fast, and slow)- *models*
- K.43 observe, record, and compare the length of time it takes to travel from one place to another (e.g., faster/slower)- *changes*
- K.44 using a color chart, identify the

colors- *models*

- K.45 observe clouds and know that there are different kinds- *systems*
- K.46₃ observe the effects of wind- *systems*
- K.47₃ name and describe the four seasons- *systems*
- K.48_{3,5,8} observe the weather and describe it in general terms- *systems*
- K.49₃ observe air temperature changes during the day- *changes*
- K.50₃ observe and graph daily changes in weather- *changes*
- K.51₃ recognize that there are more stars than you can see or count- *changes*
- K.52₃ recognize that the stars, sun, and moon appear to move- *changes*
- K.53 observe and compare the properties of rock, sand, and soil- *changes*
- K.54 observe the effects of weather on humans, animals, and plants- *changes*
- K.55₃ explore the reason for day and night- *changes*
- K.56_{4,5,7,9} observe and describe the effect of evaporation on salt water and tap water in various environments- *changes*
- K.57 make a model of the earth to illustrate that the earth has more water than land- *models*
- K.58₃ use materials to make imprints (e.g., wet sand, clay)- *models*
- K.59₃ draw and describe models of the sun, moon, and earth- *models*
- K.60_{3,4} use a chart to identify the types of weather daily (e.g., sunny, cloudy)- *models*

Science History

- K.61 listen to the lives and discoveries of scientists (e.g., from short stories and news items, films and videos, and visit with men and women scientists)
- K.62 recognize that science changes over time (e.g., dinosaurs no longer live, rocks break off from mountains)
- K.63 realize that scientists will continue

to discover new things (e.g., listen to reports from daily papers and news magazines and visit with scientists)

Science, Technology, and Society

- K.64 recognize that there are many science-related careers through the use of speakers, field trips, audio-visual, and/or printed material (e.g., veterinarian, forest ranger)
- K.65 recognize that science skills are used in careers not usually related to science (e.g., farmer, construction worker)
- K.66 observe how technology has positively or negatively affected the quality of life in West Virginia and the world (e.g., toys, laser price scanner, litter)
- K.67 observe that common daily events involve science (e.g., use of car, use of microwave, ice melting)
- K.68 develop respect and responsibility for the environment by recognizing the interrelationship of living and non-living things and engaging in conservation practices

Computer/Technology

- K.69 use appropriate software to practice and master Kindergarten instructional objectives in science
- K.70 on a keyboard, use the letters of his/her name and/or numbers to "Log On"
- K.71 on a keyboard, use special function keys such as "Return/Enter, space bar, and Esc"
- K.72 select a program from a menu
- K.73 use a mouse to "point and click"
- K.74 identify the uses of technology at home and play
- K.75 identify various components of a computer (e.g., monitor, keyboard, CPU, disk drive, mouse, printer)

Grade One

English Language Arts

The first grade student will be immersed in a literature-rich environment to develop an awareness of print materials as sources of information and enjoyment. The children will grow in language development through reading, writing, speaking, and listening that will become lifelong skills. First grade students will learn from reading authentic literature such as fiction, non-fiction, and poetry that reflects cultures, experiences, and ideas. The English Language Arts curriculum will encourage active children to actively participate as members of the community of readers and writers.

Listening/Speaking

- 1.1 listen to a variety of literary forms, including stories and poems
- 1.2 clarify and explain words and ideas
- 1.3 **follow and state simple two-step directions**
- 1.4 use singular and plural nouns and compound words in oral communication
- 1.5_{3,4,5,6,7,8} **given descriptive words and other specific vocabulary, identify synonyms, antonyms, and homonyms**
- 1.6 express ideas orally in complete sentences (e.g., utilizing communication technologies as a tool)
- 1.7_{2,3,4} **make inferences based upon story characters and actions**
- 1.8₂ **use story content and personal background to make predictions**
- 1.9 given a narrative, orally summarize story content
- 1.10 use graphic organizers and visualization to determine meaning
- 1.11_{2,3} **identify beginning, middle, and end of a narrative selection**
- 1.12_{2,3,4} **given a narrative, repeat the correct sequence of events**
- 1.13_{2,3,4,5,6,7,8} **remember specific details, interpret and extend meaning, and evaluate material**
- 1.14₂ **hearing a narrative, utilize pictures as well as print options to enhance comprehension (e.g., illustrate part of a story and label with a sentence)**

- 1.15 demonstrate appropriate listening behaviors (e.g., resist distractions, stay alert, and use appropriate listening posture—hands/feet quiet, eyes on the speaker)
- 1.16₂ given an oral selection, respond to, explore, and imagine beyond story
- 1.17 given a word, create rhyming word families
- 1.18 identify and manipulate phonemes in syllables and multi-syllable words
- 1.19 given words with one to three syllables, hear, say, and manipulate phonemes of spoken language (e.g., divide words into phonemes and blend phonemes into words)
- 1.20 use descriptive words to name objects, places, and things

Reading Comprehension

- 1.21_{2,3,4,5,6,7,8,9,10,11} **read literary works by national and international authors to include but not to be limited to: fairy tales, science fiction, tall tales, and poetry**
- 1.22₂ **determine relationships between phonemes and graphemes**
- 1.23_{K,2} **identify single consonants/sounds in initial, medial, and final word positions**
- 1.24₂ **identify short and long vowels and their sounds**
- 1.25_{K,2} **identify consonant blends in initial positions (e.g., bl, fl, pl, sl, br)**

- 1.26_{K,2} identify consonant digraphs in initial and final word positions (e.g., ch, sh, th, wh)
- 1.27₂ identify "other" vowel sounds (e.g., oy, oo, ea, ou, ur)
- 1.28₂ identify "r-controlled" vowel sounds (e.g., ur, ar, ir)
- 1.29 create and use rhyming words
- 1.30 read sight words fluently from an appropriate word list
- 1.31₂ identify and use compound words
- 1.32₂ identify and use contractions and be able to match them to the two words being replaced (e.g., I'm for I am)
- 1.33 divide words with affixes, double consonants, and compound words into syllables
- 1.34₂ identify words with inflectional endings (e.g., s, es, ed, ing, er, est)
- 1.35 identify and use prefixes (e.g., reread, untie)
- 1.36 use context clues to determine word meaning
- 1.37 understand and comprehend multiple meaning words
- 1.38_{3,6,7,9} determine the object that corresponds to two sentence riddles
- 1.39_{K,2} use picture clues to complete a passage by choosing one of three words to complete a sentence describing a picture
- 1.40_{2,5,6,7,8,9} read for meaning in sentences using both illustration and text
- 1.41_{2,4,5,6,8,9,11} respond to both literal and interpretive comprehension questions after reading a short story selection
- 1.42_{2,4,5,6,8,9,10} interpret recreational (narrative), textual (expository), and functional reading material
- 1.43_{2,3,4,5,6,7,8,9,10} differentiate between fiction and nonfiction
- 1.44_{K,2,3,4,5,8,9,10,11} follow written directions sequentially to achieve a desired result
- 1.45 dramatize, illustrate, and retell stories that have been read
- 1.46 retell major events of a story in sequence
- 1.47 identify and understand cause

- and effect in a familiar story
- 1.48 compare and contrast in text and descriptive language
- 1.49 recall main ideas and details from a familiar story
- 1.50 identify story elements (e.g., plot, character, setting)
- 1.51 use the text and illustrations to predict and confirm
- 1.52 select and read books for independent, recreational reading
- 1.53 explain likes and dislikes of a reading selection

Reading Vocabulary

- 1.54_{2,3,4,5,6,7,8,9,10,11} recognize and use synonyms, antonyms, homonyms, and homophones
- 1.55_{2,3,4,5,6,7,8,9,10,11} use context clues to gain meaning of unfamiliar words
- 1.56_{K,2,3,4,5,6,7,8,9,10,11} identify and use multiple meaning words

Writing

- 1.57 use directionality (e.g., left/right, top/bottom, up/down)
- 1.58 use dominant hand with correct paper position
- 1.59 hold pencil correctly
- 1.60 assume and maintain appropriate position
- 1.61 use appropriate stroke formation
- 1.62 write upper/lower case letters correctly
- 1.63 use lined paper correctly with headline, midline, baseline
- 1.64 demonstrate uniformity when writing letters
- 1.65 use uniform spacing between letters, words, and sentences
- 1.66 write numerals 0-9 correctly
- 1.67 write comma, question mark, exclamation mark correctly
- 1.68 self-evaluate handwriting
- 1.69 use the five steps for process writing (e.g., prewrite, draft, revise, edit, and publish)
- 1.70 write original and complete sentences and paragraphs that describe and explain
- 1.71 complete riddles and rhymes
- 1.72 write summaries of stories read or dictated
- 1.73 write original compositions

- 1.74 use electronic and traditional editing strategies to spell words correctly (e.g., proper nouns, in and inn [homophone])

Spelling

- 1.75 recognize and differentiate among initial, medial, and final sounds
- 1.76 reproduce designs, shapes, numerals, letters, etc. accurately in a predetermined sequence
- 1.77 produce the graphic symbols for phonemes (e.g., vowel sound spellings and consonant sound spellings)
- 1.78 spell phonetically regular words
- 1.79 spell phonetically irregular words (e.g., could, they, one)
- 1.80 spell contractions
- 1.81 spell compound words
- 1.82 spell words with silent consonants (e.g., kn, wr, mb)
- 1.83 spell irregular verbs (e.g., knew, known)
- 1.84 spell irregular plural nouns (e.g., teeth, mice, wives, wolves)
- 1.85 use spelling patterns (e.g. consonant vowel-consonant)
- 1.86 spell multi-syllable words
- 1.87 make structural changes as needed in root words by adding inflectional endings (e.g., d, s, es, ing) and dropping final silent "e" before adding "ing"
- 1.88 make structural changes as needed by changing terminal letters before endings: 1) doubling a final consonant letter 2) changing "y" to "i" before adding endings (e.g., ed, er, est), 3) adding suffixes to change a part of speech
- 1.89 make structural changes as needed to correctly spell words with prefixes
- 1.90 listen to a word and a sentence containing that word to identify and select the correct spelling of that word: basic sight words, frequently used nouns and verbs, single and double consonants in initial, medial, and final positions (e.g., consonant blends and consonant digraphs, long and

short vowels, vowel digraphs, and vowel diphthongs)

Language

- 1.91 differentiate between common and proper nouns
- 1.92^{2,3,4,5,6,7,8,9,10,11} capitalize first word in a sentence, the pronoun "I", months of the year, and proper nouns (e.g., months of the year, days of the week, names of people)
- 1.93^{2,3,4} identify and use correct punctuation: period, question mark, and exclamation point
- 1.94^{2,3,4,5,6,7,8,9,10,11} use correct subject-verb agreement with corresponding proper verb formation
- 1.95 edit for understanding and meaning
- 1.96^{2,3,4,5,6,7,8,9,10,11} understand and correctly use present and past tense
- 1.97^{2,3,4,7} identify and correct errors in sentence construction and language expression
- 1.98^{2,3,4,5,6,7,8,9} identify sentence fragments
- 1.99^{4,10,11} compose narrative text using correct sentence structure, adding to key ideas and supplying details
- 1.100^{2,3,4,5,6,7,8,9,10,11} identify an author's purpose for writing a selection
- 1.101^{2,3,5,6,7,8,9,10,11} identify supporting sentences that would or would not support key ideas in a text
- 1.102^{8,10,11} communicate ideas in well-organized and clearly written text
- 1.103² identify words in alphabetical order beginning with different letters and beginning with the same letter
- 1.104 identify and use nouns, verbs, pronouns, and adjectives
- 1.105 use contractions and irregular verbs correctly

Study Skills

- 1.106 acquire organizational skills to manage school materials and time on task

- 1.107^{3,4,5,7,9,11} locate and become familiar with reference sources (e.g., dictionary, glossary, encyclopedia, card catalog)
- 1.108 interpret information on graphic sources (e.g., charts/tables, graphs, lists, schedules, diagrams, scale drawings, maps/atlas, statistical illustrations, timelines)
- 1.109^{3,4,5,6,7,9,10,11} **determine if a word is on a dictionary page when guide words are supplied**
- 1.110^{5,6,7,8,9,10} given a book, identify the author, illustrator, and title and be able to use the table of contents, glossary, and index
- 1.111 practice and use test-taking strategies (e.g., listen closely, make careful choices, do your best)
- Computer/Technology**
- 1.112 use appropriate software to practice and master first grade English language arts instructional objectives
- 1.113 turn on/off a student workstation
- 1.114 on a keyboard, use letters, numbers, and other special function keys (e.g., shift, delete/backspace, and arrow keys) to input information
- 1.115 save and/or retrieve a file
- 1.116 print a document
- 1.117 identify the uses of technology at home and school
- 1.118 demonstrate respect for the (computer) work of others
- 1.119 identify fundamental computer terms (e.g., disk, software, hardware, boot/start, cursor, etc)
- 1.120 select and use appropriate software and/or other technologies to locate and use reference sources (1.07)
- 1.121 use graphic software to read and interpret information from charts and bar graphs (1.08)

Grade One Mathematics

The first grade objectives continue the emphasis on the use of manipulatives, concrete materials, and appropriate technologies to give students the foundation needed to explore new mathematical concepts. Development of mathematical language allows students to explain such concepts as: addition and subtraction of whole numbers; knowing the value of coins; knowing addition and subtraction facts; identifying two and three dimensional figures; and gathering, organizing, and explaining data.

Number Theory and Number Sense

- 1.1₂ count forward to 999 and backward from 20 with and without objects; name numbers to 999
- 1.2 given a set containing 100 or fewer concrete items, count and write the corresponding numeral
- 1.3₂ compare and order numbers through 100 using words "greater than", "less than", and "equal to"; identify the set with the least number or the most number of elements
- 1.4₂ identify and construct place value models for written numbers through 200 using concrete materials; find the place value of a digit in the one's and ten's place without models
- 1.5₂ model and count by twos, fives, and tens to 100
- 1.6₂ identify the ordinal positions first through twelfth
- 1.7 identify a number through 100: before or after a given number, ten more or ten less than a given number
- 1.8₂ group and count concrete items by tens and ones and write the number in standard

- and expanded form
- 1.9_{2,3,4} count and trade a collection of pennies, nickels and dimes, whose total value is one hundred cents or less

Fractions and Decimals

- 1.10₂ identify and model halves, thirds, fourths, and whole using appropriate materials or a drawing; identify models divided into different parts
- 1.11 fold and cut paper circles, squares, and triangles into halves and fourths labeling the parts; identify models divided into equal parts
- 1.12_{2,3,4,5,6} identify a fraction model that is part of a group

Whole Number Operations and Computations

- 1.13_{2,3,4,5,6} model addition and subtraction of whole numbers with a sum of twenty or less using objects and a number line. Identify the identity element (0), missing elements, and identify the number sentence that represents the commutative property of addition ($1+3=3+1$), and write the corresponding number sentence. Identify a number sentence that represents the inverse operation of a given number sentence ($6-1=5$ and $6=1+5$ - fact families)
- 1.14₂ recall basic addition facts with sums to ten and the corresponding subtraction facts
- 1.15₂ model and solve two and three digit addition and subtraction without regrouping and write the corresponding number sentence
- 1.16₂ add three numbers with a sum of eighteen or less
- 1.17₂ solve one digit addition and subtraction problems written horizontally and vertically with sums to 18
- 1.18_{2,3,4} solve story and picture

problems involving one-step solutions, using basic addition and/or subtraction facts, and non-routine strategies (logical reasoning)

Patterns and Relationships

- 1.19 sort and classify concrete objects according to more than one attribute including size, color, shape, and thickness
- 1.20_{K,2,3,4,5,6,7,8} analyze, extend, and describe a wide variety of repeating patterns (e.g., using numbers, rhythm, shapes, and calculators)
- 1.21 identify patterns in our world

Probability and Statistics

- 1.22_{2,3,4} record data from simple experiments using spinners and color tiles/cubes, and use data to predict which of the two events is more likely or less likely to occur if the experiment is repeated
- 1.23 create, read, and interpret a pictograph with each picture representing a single unit
- 1.24 investigate, identify and describe various forms of data collection (e.g., recording daily temperature, lunch count, attendance, or favorite food)
- 1.25 interpret information displayed on graphs using the vocabulary: less, more, fewer, greater than, and less than
- 1.26_{2,3,4} tally by ones, organize the data in a chart/table, and construct a bar graph; read and interpret tally charts and tables

Geometry and Spatial Sense

- 1.27_{2,3,4} draw and describe triangles, squares, circles, and rectangles according to number of sides and vertices (corners)
- 1.28 use physical materials to construct, identify, describe, and classify three-dimensional figures: cube, cone, sphere, cylinder, and rectangular solid

- 1.29 identify three-dimensional figures in the environment
- 1.30 identify and construct open and closed figures
- 1.31_{2,3,4} **determine and draw lines of symmetry**
- 1.32_{2,3,4} **identify and construct plane figures that are congruent (same shape and size) and similar (same shape, different size)**

Measurement

- 1.33₂ compare the volumes of two given containers using concrete materials (e.g., sand, jelly beans, rice)
- 1.34₂ compare the weight of two objects using a balance
- 1.35_{k,2,3,4,5,6,7} **use customary, metric, and non-standard units to measure length to the nearest whole unit (e.g., inch, cm, paper clips)**
- 1.36 explain time concepts in context of personal experiences (e.g., We will go outside in one hour.)
- 1.37₂ **name the months of the year and find a date on a monthly calendar (e.g., the fourth Wednesday in March)**
- 1.38 **read time to the nearest hour and half hour using an analog and digital clock**
- 1.39 **identify 1 cent, 5 cents, 10 cents, and 25 cents coins**
- 1.40 **role play making change up to a dime (e.g., using pennies, and/or nickels)**
- 1.41 **identify the number of pennies equivalent to a**

nickel, dime, quarter, and dollar

- 1.42_{2,3,4,5,6} **select appropriate units to determine length, weight, or volume using standard measurement (e.g., would you use inches, pounds, or cups?)**

- 1.43_{k,2,3} **compare two objects or events, using direct comparison according to one or more of the following attributes: length, height, weight, temperature, and volume**

Computer and Technology

- 1.44 use appropriate software to practice and master first grade instructional objectives in mathematics
- 1.45 turn on/off a student workstation.
- 1.46 on a keyboard, use letters, numbers, and other special function keys (e.g., shift, delete/backspace, and arrow keys) to input information
- 1.47 save and/or retrieve a file
- 1.48 print a document
- 1.49 identify the uses of technology at home and school
- 1.50 demonstrate respect for the computer work of others
- 1.51 identify fundamental computer terms (e.g., Disk, software, hardware, boot/start, cursor, etc.)
- 1.52 use a calculator to produce repeating number patterns
- 1.53 use graphing software to create a table and/or bar graph

Grade One Social Studies

The grade one social studies program of study continues the introduction of what constitutes a good citizen by focusing on self and family. Student rights and responsibilities as citizens will be practiced. Rules will be developed and enforced using conflict resolution strategies. The course introduces patriotic traditions and develops an understanding of the connection between past and present. A variety of graphic skills will be incorporated throughout the course including graphs, charts, timelines, and other data collection activities.

Activities will contribute to an understanding of the relationship between people and their environment. Consumer roles in communities and the ways that money relates to those roles will be explored. Good safety practices in communities will be taught. Common geographic features and map symbols will be introduced through simple map construction.

The objectives for elementary West Virginia social studies may be integrated throughout the K-4 curriculum.

Civics

- 1.1_{3,4,5,6,7,8,9,10,11} name the country / President, state/Governor, town/Mayor
- 1.2₃ participate in making classroom rules through experiencing consequences- both positive and negative- and participating in the process of resolving conflicts
- 1.3₃ experience various role responsibilities within the classroom and in cooperative learning groups (e.g., group leader, recorder, reporter, collector)
- 1.4_{3,4} be given the opportunity to recite the Pledge of Allegiance, participate in patriotic singing, and celebrate national holidays
- 1.5 explain and experience the benefits of volunteerism in the community and at school
- 1.6₃ practice safety precautions in role playing situations
- 1.7 express opinions and accept opinions of others in solving problems and/or resolving conflicts

Economics

- 1.8_{3,4} identify the name and value of the following coins: penny, nickel, dime, and quarter, and role-play their exchange for goods/services
- 1.9₄ compare and contrast occupations in the community
- 1.10₃ identify the need to conserve resources through recycling and litter reduction
- 1.11 make choices from among needs and wants and predict the consequences of those choices
- 1.12 recognize that although customs and habits differ from one group to another, all people have the same basic needs

Geography

- 1.13 construct a simple map of a familiar area incorporating cardinal directions and map

symbols

- 1.14₃ locate on a world map, the United States, the two Americas, the Atlantic and Pacific Oceans, and West Virginia
- 1.15₃ describe how climate/weather affects the way people live (e.g., food, clothing, shelter, and recreation)
- 1.16 sequence the days of the week and months of the year
- 1.17₃ given a United States map, identify major geographic features (e.g., rivers, lakes, mountains, and oceans)
- 1.18 recognize common traffic, safety, and information signs

History

- 1.19 identify different types of families (e.g., single parent, extended, multi generational) and homes (e.g., apartments, mobile homes, houseboats)
- 1.20_{3,4,5} investigate family history through two generations (parents, grandparents) and make comparisons to present-day living, using such sources as timelines, interviews, surveys, and graphs
- 1.21_{3,4} list the major holidays and explain their significance
- 1.22 explore the values and contributions of heroic men and women past and present
- 1.23 compare the past to the present by investigating stories of people (e.g., folk tales, pictures, poems, songs, legends, holidays, and customs)

Study Skills

- 1.24 participate in data collection activities (e.g., polls, surveys) and the graphing of results
- 1.25 construct and interpret simple maps of the community using cardinal directions, location, a scale, and symbols in a legend
- 1.26 construct and interpret tables,

charts, and graphs

Computer/Technology

- 1.27 use graphics software to create tables and graphs
- 1.28 use appropriate software to practice and master first grade instructional objectives in social studies
- 1.29 turn on/off a student workstation
- 1.30 on a keyboard, use letters, numbers, and other special

- function keys (e.g., shift, delete/backspace, and arrow keys) to input information
- 1.31 save and/or retrieve a file
- 1.32 print a document
- 1.33 identify the uses of technology at school and work
- 1.34 demonstrate respect for the (computer) work of others
- 1.35 identify fundamental computer terms (e.g., disk, software, hardware, boot/start, cursor)

Grade One Science

The Coordinated and Thematic Science (CATS) One objectives builds on the process skills and adds data gathering and reporting. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy in the fields of biology, chemistry, physics, and earth sciences. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of the major science themes of systems, changes, and models. Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated in all activities. CATS One continues the excitement of learning about the natural world and allows the beginning of experimentation and data collection to emphasize the tools of science and the properties of matter.

Nature of Science

- 1.1 identify science as a search for answers about themselves and their world (e.g., understand that living things share characteristics, make observations about differences among objects found in nature, distinguish among living and non-living)
- 1.2 recognize the roles of people involved in science careers
- 1.3 explore objects and events using the five senses
- 1.4 describe changes in nature
- 1.5 probe deeply into natural phenomena by asking and answering questions about the environment (e.g., animals, plants, mountains, rivers)
- 1.6 use a variety of communication techniques (e.g., sketches, pictographs, models)
- 1.7 realize that science is never finished by observing changes in

the environment (e.g., weather cycles, plant and animal cycles, energy cycles)

- 1.8 recognize that a solution to one scientific problem often creates new problems (e.g., recycling, pollution)

Scientific Attitudes/Habits of Mind

- 1.9 ask and answer questions to further an appreciation and joy of discovery of the natural world
- 1.10 demonstrate innate curiosity, initiative, and creativity by questioning observations of changes in their environment (e.g., life cycles, motion of celestial objects, sun and shadow)
- 1.11 be in awe and wonder of the patterns, variations, and interactions of natural objects in the environment (e.g., trees,

- 1.12 rivers, rock formations, weather) trust observations of changes in the environment (e.g., use of senses)
- 1.13 listen to and be tolerant of different viewpoints by engaging in collaborative activities
- 1.14 continue probing phenomena until questions are resolved (e.g., properties of living and non-living, motions of sun and moon)
- 1.15 recognize that developing solutions to problems takes time and patience
- 1.16 recognize that science includes both individual and cooperative ventures (e.g., making models, visit scientists at work, read about lives of scientists)

Scientific Processes/Thinking Skills

- 1.17 develop observation skills (e.g., use of senses)
- 1.18 collect, record, and compare information (e.g., pictograph, bar graph of heights, months of birthdays)
- 1.19 use a variety of classification systems (e.g., sorting, sequencing) and associate objects and characteristics (e.g., spirals in shells, growth rings of trees, movement of living things)
- 1.20 measure the length and width of various objects using standard and non-standard units (e.g., metric ruler, paper clips, counting bears)
- 1.21 use mathematical skills in scientific investigations (e.g., ordering, sequencing, measuring, graphing)
- 1.22 describe trends of data and make predictions based on that data (e.g., metamorphosis of frogs, seasonal changes and plants, temperature and weather)
- 1.23 participate in decision making

Laboratory Investigations/Hands-On Learning

- 1.24 engage in active inquiries,

- investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and laboratory skills
- 1.25 use scientific equipment and everyday materials to investigate the world (e.g., hand lens, balance, thermometer, seeds, rocks, magnets, calculators, computers)
- 1.26 use safe and proper techniques for handling, manipulating, and caring for science materials

Science Themes and Subject Matter

- 1.27 develop an understanding of the scientific themes of systems, changes, and models (e.g., systems is a collection of parts and processes that interact with each other; change occurs gradually, repetitively, or randomly; a model is a picture, description, or a representation of the real thing)
- 1.28 understand that the study of living and non-living in the natural world integrates living organisms, earth materials, and physical properties of matter
- 1.29 establish connections across the curriculum (e.g., integrate science with mathematics, social studies, language arts, arts, and/or physical education)
- 1.30_{3,4,5} compare, sort, and group objects according to size, shape, color, texture, weight, buoyancy, and magnetic properties- *systems*
- 1.31_{4,5,6} classify objects as living or non-living- *systems*
- 1.32_{4,5,6,7,8,9,10,11} recognize that water can be a solid (ice), a liquid (rain), and can change from one form to another- *changes*
- 1.33_{3,5,6,7,8,9,10} identify needs of living things (e.g., food, water, light)- *systems*
- 1.34_{3,4,5,6,7} recognize, compare, and/or sequence changes in living things (e.g., seed to plant, tadpole to frog, caterpillar to butterfly) -

changes

- 1.35_{3,5,7,9} construct and/or manipulate models that depict movement of living and non-living things in air, water, space, and on land (e.g., birds and airplanes flying, fish and boats moving through water, animals and vehicles moving on land)- *models*
- 1.36_{3,5,6,7} recognize that heat can be produced in many ways (e.g., burning, rubbing)- *systems*
- 1.37_{3,6,7} understand energy types and sources (e.g., sunlight, electricity) and their relationship to heat and temperature- *systems*
- 1.38 compare the effects of force on an object (e.g., changing direction, stopping, slowing down, speeding up)- *systems*
- 1.39 notice that objects can change direction when striking a surface (e.g., balls off a wall, light off a mirror)- *changes*
- 1.40 observe the changes in the object's motion while moving over a surface (e.g., slowing, speeding up, curving)- *changes*
- 1.41 recognize that sound may change in volume as it travels through different substances (e.g., air, water, wood)- *changes*
- 1.42_{3,5,6,8,10} examine objects with magnetic properties and observe the changes in fields (e.g., magnet and iron filings between transparencies)- *changes*
- 1.43 draw pictures of objects that produce heat (e.g., sun, stove, toaster)- *models*
- 1.44 record/draw a person's shadow at different times of the day- *models*
- 1.45 construct a model of a simple machine to show how to make work easier (e.g., lever, wedge)- *models*
- 1.46 construct a musical instrument to demonstrate that sounds are produced by vibrations (e.g., rubber band guitar)- *models*
- 1.47₃ compare the day sky with the night sky- *systems*
- 1.48₃ identify stars as very distant objects that give off light- *systems*
- 1.49 explain that the moon reflects light from the sun- *systems*
- 1.50 identify reasons why the sun is important- *systems*
- 1.51 identify bodies of water and landforms on Earth- *systems*
- 1.52₃ identify important uses of air- *systems*
- 1.53₃ identify various weather changes (daily and by seasons) and their effect on living organisms- *changes*
- 1.54_{3,4} observe and record changes in weather- *changes*
- 1.55 record temperature at different times of the day (e.g., cool morning, warm at noon)- *changes*
- 1.56₃ understand that the sun, moon, and stars appear to move- *changes*
- 1.57₃ infer that heat is energy and some materials transfer heat better than others- *changes*
- 1.58 identify the globe as a model of the Earth- *models*
- 1.59₃ compare imprints (e.g., animal tracks, leaf prints, shell prints)- *models*
- 1.60 construct a wind machine to show wind direction (e.g., wind sock)- *models*
- 1.61_{3,4,5,7,9} recognize that earth materials consist of solids (e.g., rocks, soils), liquids (e.g., water), and gases (e.g., air) in the atmosphere- *models*
- 1.62_{3,9} observe and explain the water cycle (e.g., Ziploc bag with water taped to windows)- *models*

Science History

- 1.63 study the lives and discoveries of scientists (e.g., use short stories, films, and videos) about men and women of science and visit their places of work)
- 1.64 recognize that science changes over time (e.g., stars appear and disappear, new animals replace dinosaurs)
- 1.65 realize that scientists will continue to discover new things (e.g., listen to reports and news articles about new stars, plants, and animals and visit with scientists about their work in laboratories)

Science, Technology, and Society

- 1.66 recognize that there are many science-related careers through the use of speakers, field trips, audio-visual, and/or printed material (e.g., astronomer, geologist)
- 1.67 recognize that science skills are used in careers not usually related to science (e.g., carpenter, bee keeper)
- 1.68 develop an awareness of how technology has positively or negatively affected the quality of life in West Virginia and the world (e.g., electromagnets, power lines)
- 1.69 recognize that common daily events involve science (e.g., CD players, Velcro, weather)
- 1.70 develop respect and responsibility for the environment by recognizing the interrelationship of living and non-living things and engaging in conservation practices

Computer/Technology

- 1.71 use appropriate software to practice and master first grade instructional objectives in science
- 1.72 turn on/off a student workstation
- 1.73 on a keyboard, use letters, numbers, and other special function keys (e.g., shift, delete/backspace, and arrow keys) to input information
- 1.74 save and/or retrieve a file
- 1.75 print a document
- 1.76 identify the uses of technology at school and work
- 1.77 demonstrate respect for the computer work of others
- 1.78 identify fundamental computer terms (e.g., disk, software, hardware, boot/start, cursor)
- 1.79 using the graphing application of appropriate software, create tables and/or bar graphs
- 1.80 use a calculator to perform mathematical functions in data analysis

Grade Two

English Language Arts

In grade two, students will continue to be immersed in a literature-rich environment to encourage exploration of various literary forms. Experiencing a total English Language Arts program, enriched by technology, second graders will apply skills mastered through reading, speaking, listening, and writing activities across the curriculum. Using a combination of writing strategies, students will be able to read with comprehension, to speak and listen effectively, and to develop both literal and critical thinking skills. Second graders will develop from dependent to independent readers/learners, and will begin to make their own choices for recreational and informative reading.

Listening/Speaking

- 2.1_{1,3,4,5,6,7,8} given descriptive words and other specific vocabulary, identify synonyms, antonyms, homophones, and homonyms
- 2.2_{1,3,5,6,7,8} use story content and personal background to make predictions
- 2.3_{1,3,4} given a narrative, make inferences based upon story characters and actions
- 2.4_{3,4} given a narrative, differentiate between factual information and information based on opinion
- 2.5_{1,5,6,7,8} listen to a story, remember information to interpret or extend meaning, evaluate material, or perform a task
- 2.6_{1,3,4} listen to a story, place events in correct sequence
- 2.7_{1,3} identify the beginning, middle, and end of a narrative
- 2.8₁ hearing a narrative, utilize pictures as well as print options to enhance comprehension (e.g., illustrate part of a story and label with a sentence)
- 2.9_{3,4} given a narrative, identify the main idea and supporting details to determine the purpose of a passage
- 2.10_{1,5,6,7,8} listen to a variety of literary forms, respond to, explore, and imagine beyond story
- 2.11 participate in class discussions, following rules for conversation (e.g., utilizing communication technologies)
- 2.12 create and share stories orally with an audience
- 2.13 ask for clarification and/or explanation of words and ideas
- 2.14 state and follow directions with three or four steps
- 2.15 orally identify and manipulate phonemes in syllables and words
- 2.16 discriminate long and short vowel sounds
- 2.17 given a word, create rhyming word families
- 2.18 demonstrate appropriate listening and speaking behaviors after differentiating between active listening and hearing

Reading Comprehension

- 2.19_{1,3,4,5,6,7,8,9,10,11} read literary works by national and international authors to include, but not limited to: humor, irony, make-believe, fiction, nonfiction, fairy tales, tall tales, and poetry
- 2.20_{1,3,4,5,6,7,8,9} interpret recreational, textual, and functional material
- 2.21_{K,1,3,4,5,6,7,8,9,10,11} use informational text (trade books, textbooks, magazines, and reference sources)
- 2.22_{K,1,3,4,5,6,7,8,9,10,11} determine differences between fiction and nonfiction selections
- 2.23_{5,6,7,8,9,11} analyze the organizational structure, author's style, and text characteristics to determine genre
- 2.24_{K,1} identify single consonants/sounds in initial, medial, and final word

- positions**
- 2.25 **identify short and long vowels and their sounds**
- 2.26_{K,1} **identify two and three letter consonant blends and digraphs in initial, medial, and final word positions**
- 2.27₁ **identify "other vowel" sounds (e.g., diphthongs, digraphs, r-controlled vowels, vowel variants, and schwa sound [away])**
- 2.28 **identify consonant and vowel patterns**
- 2.29 **differentiate between rhyming and non-rhyming words and word families**
- 2.30₁ **recognize word parts to decode and assign meaning to words**
- 2.31 **identify base/root words in an extended word**
- 2.32 **identify words with suffixes (e.g., -ful, -less) and prefixes (e.g., un-, re-)**
- 2.33₁ **identify words with inflectional endings (e.g., -ed, -ing, -s, -es, -er, -est)**
- 2.34₁ **identify contractions by matching them with the two words being replaced**
- 2.35 **identify nouns showing possession**
- 2.36₁ **identify compound words**
- 2.37 **use long word decoding strategies to identify words and count syllables**
- 2.38 **use a pronunciation key**
- 2.39_{K,1,5,9} **use illustrations and text to read for meaning in sentences and paragraphs**
- 2.40_{3,4,5,6,7,9,10,11} **use context clues to determine a reasonable meaning of an unknown word**
- 2.41_{K,1,3,4,5,6,7,8,9,10,11} **determine sequence of events from stories and written text**
- 2.42_{K,1,3,11} **comprehend and follow steps in a process and determine reasons and/or cause-effect relationships related to these steps**
- 2.43_{5,6,9,10,11} **read to perform a task**
- 2.44_{3,4,5,6} **locate sources of additional information on a specific topic**
- 2.45 **recall details of a passage and identify the main idea of a selected reading**
- 2.46 **read sight words fluently from an appropriate grade level word list**
- 2.47 **understand first-person narrative**
- 2.48 **use figurative language (e.g., similes, metaphors)**
- 2.49 **determine relationships of events, characters, and objects in a story with regard to position, function, time, and quantity**
- 2.50_{5,8,10} **use graphic organizers such as story maps and Venn diagrams to compare, contrast, and construct meaning**
- 2.51_{1,3,4,5,6,7,8,9,10,11} **respond to both literal and interpretive comprehension questions after reading a short story selection**
- 2.52_{K,3,4,5,6,9,11} **predict outcomes based upon an understanding of the events and/or characters as described in a story**
- 2.53_{3,4} **incorporate all key concepts or the larger meaning of the text to select the best title for a selection**
- 2.54_{3,4,5,6,7,8,9,11} **empathize, relate to, and determine the motivations of characters within a story**
- 2.55 **use understanding and prior knowledge to apply rules to a specific situation**
- 2.56_{3,5,8,10,11} **identify author's purpose for writing and the organization used to accomplish that purpose**
- 2.57_{K,1,3} **use visualization techniques to determine and compare similar characteristics of objects described in a passage**
- 2.58 **explain personal reaction to a selection**
- 2.59 **discriminate between reality and fantasy and between fact and opinion**
- 2.60 **recognize descriptive language in literary works, including but not limited to, poetry**
- 2.61 **infer unstated information in a selection by asking "why" questions**
- 2.62 **given a selection, draw**

- conclusions and generate a brief summary
- 2.63 given a selection, identify characters, plot, and setting
- 2.64 select and read books for independent, recreational reading

Reading Vocabulary

- 2.65_{3,4,5,6,7,8,9,10,11} recognize synonyms, antonyms, homonyms, and homophones for identified vocabulary words
- 2.66_{3,4,5,6,7,8,9,10,11} recognize the correct meaning of a multiple-meaning word when presented in text
- 2.67_{3,4,5,6,7,8,9,10,11} apply context clues to determine the meaning of an unknown word
- 2.68 given a variety of reading material, increase the number of recognized words in presented text

Writing

- 2.69 maintain appropriate handwriting posture
- 2.70 maintain appropriate position of hand/pencil and paper/desk
- 2.71 write legible manuscript letters and numerals (0-9) using appropriate strokes
- 2.72 evaluate manuscript writing in terms of letter formation, alignment, proportion, spacing, and line quality
- 2.73 write legible cursive letters using appropriate strokes and joinings
- 2.74 self-evaluate cursive writing in terms of letter formation, alignment, proportion, spacing, and line quality
- 2.75 use the five-step writing process (e.g., prewrite, draft, revise, edit, publish) across the curriculum
- 2.76 compose a simple sentence using a subject and predicate differentiating between types of sentences (e.g., declarative, interrogative, exclamatory, and imperative)
- 2.77 compose a short paragraph with a clearly identified beginning, middle, and end containing a main idea and supporting details

- 2.78 develop various types of writing including, but not limited to: personal narratives, stories, descriptions, friendly letters, book reports, poetry, and journal entries
- 2.79 use electronic and traditional editing strategies to spell words correctly (e.g., proper nouns, in and inn [homophones])

Spelling

- 2.80 correctly spell basic sight words
- 2.81 correctly spell consonant sounds in initial, medial, and final positions including blends and digraphs
- 2.82 correctly spell vowel sounds including long and short vowels, vowel digraphs (e.g., ea as in bread, oa as in boat), and vowel diphthongs (e.g., oi, oy, oo, ou, aw, ow, ew)
- 2.83 correctly spell nouns, verbs, and root words with inflectional endings (e.g., -d, -ed, -s, -es, -ing, -er, -est)
- 2.84 make structural changes as needed when adding -ing, -ed, -er, or -est to base/root words ending in silent e
- 2.85 double a final consonant letter when necessary before adding an ending
- 2.86 change final "y" to "i" when necessary before adding an ending
- 2.87 correctly spell phonetically irregular words (e.g., could, they, one)
- 2.88 correctly spell irregular verbs and irregular plural nouns (e.g., knew, known, teeth, mice, wives, wolves)
- 2.89 correctly spell contractions
- 2.90 correctly spell compound words
- 2.91 correctly spell words with silent consonants (e.g., kn-, wr-, -mb)
- 2.92 use spelling patterns (e.g., taught- caught; light- right)

Language

- 2.93, alphabetize words beginning with different letters and

- beginning with the same letter
- 2.94 differentiate between common and proper nouns
- 2.95^{1,3,4,5,6,7,8,9,10,11} capitalize first word in a sentence, pronoun "I", titles and initials, titles of written works, greeting and closing of a letter, and proper nouns (e.g., family names, months of the year, days of the week)
- 2.96^{1,3,4,5,6,7,8,9,10,11} identify and use correct punctuation: period (e.g., end of sentence, abbreviations, initials); question mark; exclamation point; comma (e.g., in dates, after greeting and closing of letter, to separate city and state or country, with items in a series); quotation marks; and apostrophe (e.g., contractions, possessives)
- 2.97^{1,3,4,5,6,7,8,9,10,11} use correct subject-verb agreement with proper regular and irregular verb formations
- 2.98^{1,3,4,5,6,7,8,9,10,11} use past and present tense correctly
- 2.99^{1,3,4,5,6,7,8,9,10,11} recognize and write correctly formed sentences (e.g., telling, asking, exclamation, command)
- 2.100^{1,3,4,5,6,7,8,9} recognize and correct sentence fragments
- 2.101^{1,3,4,5,6,7,8,9,10,11} identify and correct errors in language expression and sentence construction
- 2.102^{1,3,4,5,6,7,8,9,10,11} identify sentences that would or would not support ideas in a text
- 2.103 write a paragraph using correct form containing a main idea and supporting details
- 2.104 recognize and appropriately use parts of speech in their own writing (e.g., nouns, pronouns, verbs, adjectives, and adverbs)
- 2.105^{1,3,4,5,6,7,8,9,10,11} determine the purpose, audience, and intent of written composition
- 2.106^{6,7,8,9,10,11} organize information and make decisions about what information is necessary and important to include

- 2.107 express experiences adequately to relate ideas

Study Skills

- 2.108^{3,4,5,6,7,9,10,11} determine if a given word is on a dictionary page when guide words are supplied
- 2.109 use the dictionary for pronunciation, spelling, and meaning
- 2.110 acquire organizational skills to manage school materials, personal time management, and information to be studied (e.g., sequence, timeline, mapping)
- 2.111^{5,6,7,8,9,10} given a book, identify the author, illustrator, and title and be able to use the table of contents, glossary, and index
- 2.112 follow written directions with multiple steps
- 2.113 use a study plan to spell new words (e.g., look-say-spell-write-check)
- 2.114 choose/narrow a topic for story paragraph writing
- 2.115 adjust reading rate to purpose
- 2.116 interpret graphic sources (e.g., charts, tables, graphs, lists, schedules, diagrams, maps, and timelines)
- 2.117 practice and use test-taking strategies (e.g., read directions carefully, read for key words, budget time, read all choices)

Computer/Technology

- 2.118 use appropriate software to practice and master second grade English language arts instructional objectives
- 2.119 demonstrate correct keyboarding posture and finger placement for the home row keys
- 2.120 on a keyboard, locate and use symbol keys (e.g., period, question mark, Caps Lock, arrow keys, shift, and ESC)
- 2.121 using a word processing program, input information such as spelling words, vocabulary words and definitions, journal writing, etc
- 2.122 use a mouse to "click and drag"

- 2.123 execute a program from disk and/or CD-ROM
- 2.124 identify the uses of technology in the community
- 2.125 describe the right of an individual to ownership of his/her (computer) work
- 2.126 identify the function of the various components of a computer system (e.g., monitor, keyboard, CPU, disk drive, CD-ROM, printer, etc)
- 2.127 use graphic software to read and interpret information from charts and bar graphs (2.116)

Grade Two Mathematics

The second grade objectives help a student to become a more independent problem solver through concrete and technology related experiences which explore: new problem solving strategies, everyday use of mathematical language, and reasonableness and interrelationships of mathematics. Additional concepts include: place value through hundreds, addition and subtraction of three digit numbers, multiplication facts through the fives and related division facts, estimation, introduction of properties of mathematics, and measurement which includes spatial perception.

Number Theory and Number Sense

- 2.1 count forward and name numbers to 1000
- 2.2₃ compare and order numbers through 1000; identify the set with the fewest or most elements
- 2.3 identify and construct models for numbers through 1000 using concrete materials
- 2.4 model and count by twos and fives to 100 and by threes and fours to 96 using mental math, paper/pencil, hundred chart, calculators, and concrete objects
- 2.5 identify the ordinal positions first through twentieth using ordered sets of objects
- 2.6 identify the number before or after any number through 1000
- 2.7 group and count concrete items by ones, tens, and hundreds and identify the place value; find the place value of a digit in the tens place
- 2.8 read and write three digit numbers, utilizing standard and expanded form
- 2.9_{3,4} model and identify odd and even numbers with and without objects

- 2.10 identify and model 100 more than and 100 less than a given number

- 2.11_{3,4} estimate, by front-end digit and rounding, numbers to the nearest hundred

Fractions and Decimals

- 2.12_{1,3,4,5} identify fraction models that are part of the whole and/or group

Whole Number Operations and Computations

- 2.13₁ recall basic addition facts with sums to eighteen and the corresponding subtraction facts
- 2.14_{1,6} identify the identity element (0) for addition
- 2.15₁ identify a number sentence that represents the commutative property of addition
- 2.16₃ model and solve without modeling two digit addition and subtraction with regrouping and write the corresponding number sentence
- 2.17_{3,4} given two whole numbers whose sum is 99 or less; estimate the sum, and find the sum using various methods of

- calculation (mental computation, concrete materials, and paper/pencil)
- 2.18_{3,4} given two whole numbers whose sum is 99 or less, estimate the difference, and find the difference using various methods of calculation (mental computation, concrete materials, and paper/pencil)
- 2.19_{3,4} model and solve without modeling three digit addition and subtraction with and without regrouping
- 2.20 solve addition and subtraction problems using data from simple charts, picture graphs, tables, patterns, and word problems. Problems will require a two step solution
- 2.21_{3,4} given a simple addition or subtraction fact, recognize and describe the inverse relationship between addition and subtraction (e.g., $3+_=7$, $7-3=_$ and $7-_=3$)
- 2.22₃ model multiplication facts and the corresponding division facts using objects, a number line, and repeated addition; then write the corresponding number sentence

Patterns and Relationships

- 2.23_{k,1,3,4,5,6,7,8} analyze, extend, describe, and create a wide variety of growing patterns (e.g., using numbers, rhythm, shape, and calculators)

Probability and Statistics

- 2.24_{1,3,4} record data from simple experiments using spinners and colored tiles/cubes, and use the data to predict which of the two events is more likely and less likely to occur if the experiment is repeated
- 2.25 create, read, and interpret a pictograph with each picture representing greater than a single unit
- 2.26_{1,3,4} read and interpret tables and tally charts

- 2.27_{3,4,5,6,7} locate ordered pairs on a grid

Geometry and Spatial Sense

- 2.28 identify and describe a cube, rectangular solid, cylinder, cone, and pyramid according to the number of faces, edges, bases, and vertices
- 2.29 compare and contrast plane and solid geometric shapes (circle/sphere, square/cube, triangle/pyramid, and rectangle/rectangular solid)
- 2.30_{3,4} given a design with a line of symmetry, construct the mirror image
- 2.31 describe the shape created by combining two or more two-dimensional shapes
- 2.32 identify and construct lines, line segments, and rays and angles using a straight edge
- 2.33_{3,4,5,6,7,8,9,10,11} identify rotations and reflections
- 2.34_{3,4} identify plane figures
- 2.35_{3,4} identify congruent figures
- 2.36_{1,3,4} identify geometric figures by the number of sides and vertices (corners)

Measurement

- 2.37_{3,4} estimate and then use a ruler to determine linear measurement to the nearest centimeter and inch; then compare lengths and determine perimeter (the distance around a polygon)
- 2.38_{3,4} given grid paper, estimate and count the number of square units needed to cover a given area
- 2.39 estimate and count the number of cubes in a rectangular box (determine volume)
- 2.40 estimate and determine weight/mass of familiar objects in pounds and kilograms
- 2.41 use standard measuring tools for measuring capacity in metric and customary units
- 2.42_{3,4} read Celsius and Fahrenheit thermometers
- 2.43 order events in relation to time

- 2.44 given a calendar, determine past and future days of the week and identify specific dates
- 2.45_{3,4,5,6,7,8} read time to the nearest quarter hour using an analog and a digital clock and calculate the elapsed time
- 2.46 identify and order all coins (penny, nickel, dime, quarter, half-dollar)
- 2.47_{3,4} role play making change to a dollar using adding/counting on
- 2.48_{1,3,4,5,6} select appropriate units to determine length, weight, or volume using metric measurement (e.g., would you use centimeters, grams, or liters)
- Computer and Technology**
- 2.49 use appropriate software to practice and master second grade instructional objectives in mathematics
- 2.50 practice correct keyboarding posture and finger placement for the home row keys
- 2.51 on a keyboard, use symbol keys (e.g., Plus, minus, equal, and dollar sign)
- 2.52 use a mouse to "click and drag"
- 2.53 execute a program from disk and/or CD-ROM
- 2.54 identify the uses of technology in the community
- 2.55 use a calculator to count by twos and fives to 100, and by threes and fours to 96
- 2.56 use a calculator to find the sum/difference of two whole numbers whose sum/difference is less than 99
- 2.57 use a calculator to produce a wide variety of growing number patterns
- 2.58 describe the right of an individual to ownership of his/her (computer) work
- 2.59 identify the function of the various components of a computer system (e.g., monitor, keyboard, CPU, disk drive, CD-ROM, printer, etc)

Grade Two Social Studies

The second grade social studies program emphasizes the broader roles of citizenship. Distinguishing basic governmental functions, patriotic symbols and traditions, as well as reporting and discussing current events, will build understanding of the child as a citizen in a democratic nation. Volunteerism and service projects in the school and community will be encouraged. Basic economic concepts, such as needs versus wants and scarcity, will be taught at this level. Classroom strategies will include activities in resource conservation and environmental preservation. The creation and interpretation of a variety of graphic tools, including charts, graphs, timelines, maps, and globes, will be integrated. Conflict resolution skills will be taught and implemented. The objectives for elementary West Virginia social studies may be integrated throughout the K-4 curriculum.

Civics

- 2.1_{3,4,5,6,7,8,9,10,11} identify functions of the following governmental bodies: Congress, state legislature, and city council
- 2.2₃ explain the difference between laws and rules and participate in the writing of "mock" rules for the school
- 2.3_{3,4} be given the opportunity to recite the Pledge of Allegiance, sing the National Anthem, participate in national celebrations, and identify famous Americans
- 2.4 choose and participate in a project of volunteer service to the

- of conflict mediation within the school community
- 2.6₃ identify appropriate safety responses to a variety of dangerous situations (e.g., fire, traffic, strangers, drugs)
- 2.7 recognize the need for responsible authority figures and identify the characteristics of good leaders in various situations
- 2.8 demonstrate increasing self-control (e.g., respecting the rights, space, and property of others in classroom and school activities)
- 2.9 identify people who make a difference in our lives, (e.g., ancestors, neighbors, community members, and people from books and other media sources)

Economics

- 2.10_{3,4,6} demonstrate knowledge of needs and wants in relation to making appropriate personal choices
- 2.11_{3,4,5,9} explain the role of banks in securing goods/services
- 2.12 practice bartering as an alternative method of securing goods/services and needs/wants
- 2.13₄ explore career options
- 2.14₃ participate in resource conservation and environmental preservation through recycling and litter reduction awareness activities

Geography

- 2.15 given a map, demonstrate knowledge of cardinal directions and a compass rose by identifying locations in relation to a base marker
- 2.16_{3,4,5,6,7,8,9,10,11} demonstrate knowledge of map legends by interpreting legend symbols
- 2.17_{3,4,5,6,7,8,9,10,11} given a world map and globe, locate the seven continents and the four oceans
- 2.18 name the months of the year and the four seasons
- 2.19_{3,4,5,6,7,8,9,10,11} given a map, identify major geographic features (rivers, lakes, oceans, islands,

continents, and mountains)

History

- 2.20_{3,4,5} investigate change over time that has occurred in the community
- 2.21_{4,9} investigate current events through various media (e.g., student newspaper, T.V., news broadcasts)
- 2.22_{3,4,7} investigate the role of Native Americans in the history of the United States
- 2.23_{3,6} celebrate historic movements, (e.g., women's history, African American history)
- 2.24 explore American heritage through children's literature
- 2.25 investigate the history of the community by identifying locally significant sites and people
- 2.26 understand that a particular gender or race does not give one rights over others

Study Skills

- 2.27_{3,5,6} use a map scale to construct class and school maps
- 2.28_{3,4,5,6,7,8,9,10,11} construct, read, and interpret graphs, charts, tables, and maps of familiar areas
- 2.29_{3,4,5,6,7,8,9,10,11} utilize and draw conclusions from various data collection methods (e.g., graphs, charts, and timelines)

Computer/Technology

- 2.30 use graphics software to create graphs and charts
- 2.31 use appropriate software to practice and master second grade instructional objectives in social studies
- 2.32 practice correct keyboarding posture and finger placement for the home row keys
- 2.33 use a mouse to "click and drag"
- 2.34 execute a program from disk and/or CD-ROM
- 2.35 identify the ways technology changes the lives of people in the community
- 2.36 describe the right of an individual to ownership of his/her (computer) work

- 2.37 identify the function of the various components of a computer

system (e.g., monitor, keyboard, mouse, disk drive, CD-ROM, printer)

Grade Two Science

The Coordinated and Thematic Science (CATS) Two objectives build upon the early stages of experimentation and maintenance of natural curiosity. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy in the fields of biology, chemistry, physics and earth sciences. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of the major science themes of systems, changes and models. Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated in all activities. CATS Two will provide opportunities for developmental and academic growth. The activities will introduce the concepts that science and technology are interrelated. The curricular thrust will be to develop early problem-solving skills through observation, experimenting and concluding.

Nature of Science

- 2.1 determine that science is a search for answers and an understanding of the world (e.g., classify plants and animals based on observations, compare likenesses and differences among plants and animals, observe changes in the environment caused by humans and/or nature)
- 2.2 identify the role of community people in science careers
- 2.3 compare and contrast objects and events using the five senses
- 2.4 identify examples of changes in nature
- 2.5 probe deeply into natural phenomena by asking and answering questions about the environment (e.g., animals, plants, mountains, rivers, deserts, grasslands, weather)
- 2.6 use a variety of communication techniques (e.g., pictographs, models, simple bar graphs, logs)
- 2.7 realize that science is never finished by observing changes in the environment (e.g., weather cycles, energy cycles, life cycles)
- 2.8 recognize that a solution to one scientific problem often creates new problems (e.g., recycling,

pollution, conservation)

Scientific Attitudes/Habits of Mind

- 2.9 ask and answer questions while participating in investigations that lead to an appreciation and joy of discovery of the natural world
- 2.10 demonstrate innate curiosity, initiative, and creativity by observing, classifying, and comparing (e.g., states of matter, structure and function of living and non-living things)
- 2.11 be in awe and wonder of the patterns, variations, and interactions of natural objects in the environment (e.g., sun, earth and moon, plant and animal structures)
- 2.12 trust observations of living and non-living things in the environment (e.g., wild and domesticated animals, weather phenomena)
- 2.13 listen to and be tolerant of different viewpoints by engaging in collaborative activities and coming to a group decision
- 2.14 continue probing phenomena until questions are resolved (e.g., properties of living and non-living things, interaction of objects)

- 2.15 engage in problem-solving activities that have multiple solutions or explanations
- 2.16 recognize that science includes both individual and cooperative ventures (e.g., group solutions to problems, individual collections of living and non-living things)

Scientific Processes/Thinking Skills

- 2.17 observe, collect and record information (e.g., graphing, ordering, sequencing, measuring)
- 2.18 use a variety of classification systems (e.g., properties of living and non-living things)
- 2.19 use mathematical skills in SI (metric) units in investigations (e.g., addition and subtraction, measurement of length, weight, and temperature)
- 2.20 use data to make predictions and construct reasonable explanations (e.g., sink and float, magnetic and non-magnetic objects, growth rate of plants)
- 2.21 plan and conduct simple investigations

Laboratory Investigations/Hands-On Learning

- 2.22 engage in active inquiries, investigations and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and laboratory skills
- 2.23 manipulate scientific instruments and everyday materials to investigate the natural world (e.g., hand lens, balance, thermometer, metric ruler, magnets, bulbs and batteries, weather instruments, calculators, computers)
- 2.24 use safe and proper techniques for handling, manipulating, and caring for science materials.

Science Themes and Subject Matter

- 2.25 develop an understanding of the scientific themes of systems, changes, and models (e.g., a system consists of many parts that which interact with each other and give rise to new properties; change occurs gradually, repetitively, or randomly; a model is a picture, description, or representation of the real thing)
- 2.26 understand that the study of living and non-living objects in the natural world integrates living organisms, earth materials, and physical properties of matter
- 2.27 establish connections across the curriculum (e.g., integrate science with mathematics, social studies, language arts, arts, and/or physical education)
- 2.28^{3,4,5,6,8,10} compare, sort, and group objects according to size, shape, color, weight, texture, buoyancy, magnetic properties and states of matter - *systems*
- 2.29^{3,4,5,6,7,8} identify the structures of living things and explain their functions (e.g., wings for flying, fins for swimming, flowers for attracting insects, physical characteristics inherited from parents) - *systems*
- 2.30^{3,5,6,7,8,9,10} observe, classify, compare, investigate, record and discuss needs of living things in different environments - *systems*
- 2.31^{3,4,5,6,7} observe, record, predict and discuss changes in living things (e.g., adaptations, growth and development) - *changes*
- 2.32^{3,4,5,6,7,8} construct and/or manipulate models that depict movement, structures, and functions of living things (e.g., animal movements, plant parts) models
- 2.33^{3,4,5,6,7,8} identify substances, mixtures and simple solutions - *models*
- 2.34^{3,5,6,8,10} demonstrate that a magnet can attract or repel objects - *systems*
- 2.35 illustrate ways to produce sound (e.g., striking and plucking strings) - *systems*
- 2.36^{4,5,6,7,8,9,10,11} explain energy types,

- sources and their relationship to heat and temperatures - *systems*
- 2.37 recognize that sound can change in pitch and volume - *changes*
- 2.38 investigate how matter changes from one state to another (e.g., melting, freezing, boiling) - *changes*
- 2.39 draw a picture of an electric circuit illustrating that electricity travels - *models*
- 2.40 recognize that some materials conduct heat better than others (e.g., metals) - *models*
- 2.41 conclude that solids, liquids, and gases take up space - *models*
- 2.42 recognize that a shadow is cast when an object blocks light - *systems*
- 2.43₃ explain how the Earth rotating on its axis causes day/night - *systems*
- 2.44 identify structural adaptations that benefit living organisms - *systems*
- 2.45 describe the water cycle and identify various sources of water - *systems*
- 2.46_{5,6,9,11} distinguish changes in the atmosphere (e.g., wind movement) - *changes*
- 2.47 collect and observe the amount of rain in one week - *changes*
- 2.48 examine changes in non-living things (e.g., events that shape the Earth) - *changes*
- 2.49₃ understand that the moon has phases - *changes*
- 2.50₃ describe how fossils are formed - *changes*
- 2.51₃ construct a collage of resources used for heating homes and buildings - *models*
- 2.52₃ construct and explain models (e.g., sun, moon, earth and landforms) - *models*
- 2.53_{3,4} construct a chart showing weather conditions over a period of time - *models*
- 2.54₃ sequence pictures of events to illustrate the passage of time - *models*
- 2.55 use a map key to identify features (e.g., mountains, rivers, lakes) - *models*
- 2.56₃ match a fossil or a picture of a

fossil, with a picture of its original organism (e.g., dinosaur shell, fern) - *models*

Science History

- 2.57 study the lives and discoveries of scientists of different cultures and backgrounds (e.g., read stories about Thomas Edison, Jacques Cousteau, Alexander Graham Bell, and Rachel Carson and visit scientists in their laboratory)
- 2.58 recognize that science changes over time (e.g., earth features change shape, variations of birds appeared, plants of long ago became coal)
- 2.59 realize that scientists will always have new things to discover (e.g., galaxies, diseases, plants, and animals)

Science, Technology and Society

- 2.60 understand that there are many science-related careers through the use of speakers, field trips, audio-visual, and/or printed material (e.g., inventor, meteorologist)
- 2.61 understand that science skills are used in careers not usually related to science (e.g., piano tuner, photographer)
- 2.62 understand how technology has positively or negatively affected the quality of life in West Virginia and the world (e.g., solar energy use, sound "pollution")
- 2.63 understand that common daily events involve science (e.g., food, electricity, toys, transportation)
- 2.64 develop respect and responsibility for the environment by recognizing the interrelationship of living and non-living things and engaging in conservation practices

Computer/Technology

- 2.65 use appropriate software to practice and master second

- grade instructional objectives in science
- 2.66 practice correct keyboarding posture and finger placement for the home row keys
- 2.67 use a mouse to "click and drag"
- 2.68 execute a science program from disk and/or CD-ROM
- 2.69 using the graphing application of appropriate software, create tables and/or bar graphs
- 2.70 use appropriate software to practice reading and interpreting graphs and charts
- 2.71 identify the ways technology changes the lives of people in the community
- 2.72 describe the right of an individual to ownership of his/her (computer) work
- 2.73 identify the function of the various components of a computer system (e.g., monitor, keyboard, mouse, disk drive, CD-ROM, printer)
- 2.74 use a calculator to perform mathematical functions in data analysis

Grade Three

English Language Arts

The third grade student will learn, practice, and apply strategies associated with a total English Language Arts program focused on preparing literate, independent, self-motivated, critical thinkers who take responsibility for their own learning. Students will be engaged in reading and responding to a variety of literature using both literal and critical comprehension skills. Students will communicate orally in large and small group settings. The student will interact with and respond to text and technology in purposeful situations across the curriculum. Proficiency in reading, writing, listening, speaking, and research skills will foster an appreciation for literature and will allow students to make connections between their experiences and the academic disciplines.

Listening/Speaking

- 3.1_{1,2,4,5,6,7,8} given descriptive words and other specific vocabulary, identify synonyms, antonyms, homonyms, and word meaning
- 3.2_{1,2,4} listen to a story, draw conclusions regarding the source of information, characters, events, setting, and purpose
- 3.3_{1,2} use story content and prior knowledge to make predictions
- 3.4₄ determine titles for narratives, paragraphs, stories, and student writing
- 3.5_{1,2,4} given a dictated paragraph or set of directions, identify stated details
- 3.6_{1,2,4} given a dictated paragraph, determine the main idea
- 3.7 given a dictated story, paraphrase, summarize, ask questions, make inferences, and identify author's opinion
- 3.8_{1,2,4} recognize the sequence of events in a story or a set of directions
- 3.9 use graphic organizers and visualization techniques to determine meaning
- 3.10 listen to a variety of literary forms
- 3.11 after differentiating between active listening and hearing, demonstrate appropriate listening and speaking behaviors (e.g., utilizing communication technologies)
- 3.12 given a speaking assignment, determine audience and purpose

of presentation (e.g., persuade, entertain, inform)

- 3.13 given a topic, present information orally using specific vocabulary
- 3.14 make an oral presentation using appropriate volume, pitch, and rate of speech

Reading Comprehension

- 3.15_{1,2,4,5,6,7,8,9,10,11} read literary works by national and international authors to include, but not limited to: legends, folktales, and non-fiction
- 3.16_{K,1,2,4,5,6,7,8,9,10,11} identify explicitly stated information including, but not limited to: story elements (e.g., setting, characters, plot), a set of directions, and functional reading (e.g., invitations, bulletins)
- 3.17_{K,1,2,4,9,10,11} determine sequence (e.g., events in a story, set of directions, and/or a missing item)
- 3.18_{2,4,5,7,8,9,10,11} use context clues to determine word meaning
- 3.19_{K,1,2,4,5,6,7,8,9,10,11} recognize characteristics of a fictional and non-fictional story
- 3.20_{K,2,4,5,6,7,8,9,11} draw conclusions regarding character (e.g., feelings, moods, traits, motives, point of view)
- 3.21_{K,1,2,4,5,6,7,8,9,10,11} draw conclusions about a sequence of activities in an announcement or advertisement

- 3.22_{2,11} draw conclusions regarding the identity of certain objects when specific details are given
- 3.23_{6,7,8,9,10,11} compare and contrast in order to draw conclusions regarding a story
- 3.24_{K,2,4,9} make predictions based on prior knowledge and story information
- 3.25_{2,4} determine an appropriate title for a reading selection or a story
- 3.26_{2,4,5,8,9,10} identify theme, main idea, and author's purpose in a selection when it is not explicitly stated
- 3.27 paraphrase, summarize, compose questions, and make inferences about material read
- 3.28_{2,5,6,9} recognize other resources where additional information on a specific topic can be located (e.g., dictionary, encyclopedia)
- 3.29_{2,5,6,9} identify possible sources of functional information (e.g., where would such information probably appear)
- 3.30 identify cause and effect related to a given event (e.g., what happened and why)
- 3.31 make generalizations regarding story elements
- 3.32 recognize figurative language (e.g., similes, metaphors, and idioms)
- 3.33 chooses and responds to a variety of reading material for pleasure and information
- 3.34 experience content through imagery (visualizing)

Reading Vocabulary

- 3.35_{2,4,5,6,7,8,9,10,11} recognize synonyms, antonyms, homonyms, and homophones for identified vocabulary words presented in isolation or within a group of words
- 3.36_{2,5,6,7,8,9,10,11} recognize the correct meaning of a word with multiple meanings when presented in text
- 3.37_{K,2,4,5,6,7,8,9,10,11} apply structural analysis and context clues to

decode and encode words

- 3.38 identify and use content area vocabulary
- 3.39 given a variety of reading material, increase the number of recognized words presented in text

Writing

- 3.40 demonstrate proper manuscript and cursive writing techniques (e.g., posture, paper placement, pencil grip, letter formation, slant, letter size, spacing, rhythm, and alignment)
- 3.41 use the writing process (e.g., prewriting, drafting, revising, editing, publishing) across the curriculum
- 3.42 develop various types of writing including but not limited to narrative, informative, and persuasive (e.g., paragraphs, short stories, reports, and letters)
- 3.43 produce original writing samples related to creative arts including but not limited to poetry and journal entries
- 3.44_{7,10} using complete sentences, write a composition with a clearly identified beginning, middle, and end
- 3.45_{7,10} using complete sentences, write a composition with a main idea and specific relevant details
- 3.46 use electronic and traditional editing strategies to spell words correctly (e.g., proper nouns, in and inn [homophones])

Spelling

- 3.47 correctly spell basic sight words and/or frequently used words
- 3.48 correctly spell words with consonant sounds including, but not limited to: consonant digraphs (e.g., ph, sh, ch, wh), consonant blends (e.g., cr, cl, bl, gr, st), silent consonants (e.g., kn, ght, mb, wr, gn), and double consonants (e.g., tt, ll, dd)

- 3.49 correctly spell vowel sounds including but not limited to vowel digraphs (e.g., ee, ea, ai, oa, ie), vowel diphthongs (e.g., oi, oy, oo, ou, aw), variants, and short/long vowels
- 3.50 apply spelling rules to spell words with prefixes and suffixes
- 3.51 correctly spell irregular verbs and irregular plural nouns (e.g., knew, known, teeth, mice, wives, wolves)
- 3.52 correctly spell compound words
- 3.53 given a contraction, correctly identify the two words that form that contraction; given two words, combine them into a correctly spelled contraction
- 3.54 correctly spell abbreviations
- 3.55 make structural changes to spell words correctly (e.g., add inflectional endings, drop silent e, double final consonants, change y to i before adding -ing)
- 3.56 identify and correctly spell homophones

Language

- 3.57_{1,2,4,5,6,7,8,9,10,11} correctly use capitalization skills (e.g., beginning of sentence, titles, proper nouns, salutations of letters, pronoun "I")
- 3.58_{1,2,4,5,6,7,8,9,10,11} correctly use punctuation skills (e.g., end of a sentence, abbreviations, salutation of a letter, quotations, contractions, possessives, commas in a series)
- 3.59_{4,5,6,7,8,9,10,11} correctly use various forms of common and proper nouns and pronouns (e.g., subjective, objective, possessive, number, gender)
- 3.60_{1,2,4,5,6,7,8,9,10,11} use proper forms of regular and irregular verbs (e.g., tense, helping verbs, forms of be)
- 3.61_{1,2,4,5,6,7,8,9,10,11} use correct subject-verb agreement
- 3.62_{4,5,6,7,8} recognize and correctly use adjectives (including articles)

and adverbs

- 3.63_{1,2,4,5,6,7,8,9} distinguish between correct and incorrect usage (e.g., this here)
- 3.64_{1,2,4,5,6,7,8,9,10,11} identify and use correct sentence structure (e.g., refrain from use of fragments, awkward, and run-on sentences)
- 3.65 identify types of sentences (e.g., statement, question, command, exclamation)
- 3.66 identify the subject and predicate in a sentence
- 3.67_{4,5,6,7,9,10,11} identify and use correct paragraph structure (e.g., indent, topic sentence, supporting sentences, recognize sentences that do not belong)
- 3.68_{4,5,6,9} recognize and use the correct combining of sentences
- 3.69_{1,2,4,5,6,7,8,9,10,11} recognize the intended audience and purpose of a brief reading selection/paragraph
- 3.70 identify and use appropriate dictionary skills (e.g., word meaning, guide words, syllabication, pronunciation guide)
- 3.71 identify appropriate reference sources for specific information (e.g., dictionary, encyclopedia, atlas)
- 3.72 identify a heading for a category of words
- 3.73_{1,2,4,5,6} correctly write and punctuate a friendly letter

Study Skills

- 3.74_{4,5,6,7} identify and use sources for different types of information (e.g., dictionary, encyclopedia, newspapers, card catalog)
- 3.75_{4,5,6,7,8,9,10,11} recognize and use dictionary skills (e.g., word meaning, guide words, the pronunciation guide, syllabication, alphabetical order)
- 3.76₈ organize and classify information (e.g., headings, categories, sorting)
- 3.77 use graphic sources to interpret

- and organize information (e.g., tables, graphs, diagrams, maps, timelines)
- 3.78 acquire organizational skills to manage school materials, time on task, and information to be studied
- 3.79 follow written directions with multiple steps
- 3.80 practice and use test-taking strategies (e.g., read directions carefully, read for key words, budget your time, read all choices)
- 3.81 identify and use parts of a book (e.g., glossary, index, title page, table of contents)
- 3.82 use a library and its reference sources (e.g., card catalog, computer listing, electronic retrieval systems)

Computer/Technology

- 3.83 use appropriate software to practice and master third grade English language arts instructional objectives
- 3.84 demonstrate proper finger

- placement for all letters on the keyboard
- 3.85 using a word processor, input information such as stories, reports, and narratives
- 3.86 use a mouse to draw simple graphics
- 3.87 identify the ways technology changes the lives of people in the community
- 3.88 demonstrate the understanding of the concept that copyright law protects a person's (or company's) work
- 3.89 relate the input, output, and processing devices of a computer to their functions
- 3.90 select and use appropriate software and/or other technologies to locate and use reference sources (3.28, 3.29, 3.74 and 3.82)
- 3.91 use the spell check function in a word processor (3.46)
- 3.92 use graphic software to create, read, interpret and organize information in the form of tables, graphs, diagrams and charts (3.77)

Grade Three Mathematics

The third grade objectives extend the students' mathematical skills and concepts through concrete experiences and appropriate technology. These concepts and operations include: whole number operations; comparing and ordering numbers to a hundred and a thousand; fractions and decimals; multiplication facts through the nines; and exploring concepts of perimeter, area, and volume. Additional concepts include: gathering and organizing data, estimating and performing measurements.

Number Theory and Number Sense

- 3.1₄ compare and order numbers through 100,000
- 3.2 group and count concrete items by ones, tens, hundreds, and thousands
- 3.3_{4,5} Read and write six digit numbers and identify place value for each digit utilizing standard and expanded form
- 3.4_{2,4} identify a number as odd or even
- 3.5₅ identify and model 100 more and

- 100 less than a given number.
- 3.6 give examples of multiple uses of numbers in the real world
- 3.7₄ estimate to the nearest 1000 using front-end digit, rounding, compatible numbers, and logical reasoning

Fractions and Decimals

- 3.8_{1,2,4,5} identify fraction models that are part of a whole and/or part of a group
- 3.9_{4,5} compare and order fractions with like and unlike

denominators

- 3.10 add and subtract like fractions using concrete materials.
- 3.11_{4,5} **read, write, compare, and order decimals expressed to hundredths**
- 3.12 identify and represent equivalent fractions, and relate fractions to decimals as tenths and hundredths using concrete materials
- 3.13_{4,5} **add and subtract decimals to tenths and hundredths.**
- 3.14 recognize and model mixed numbers using concrete materials
- 3.15_{2,4} **add and subtract two and three digit whole numbers and money with and without regrouping**

Whole Number Operations and Computations

- 3.16_{4,5} **recall basic multiplication facts 0-9 and the corresponding division facts that make up families of facts**
- 3.17_{4,5,6,7} **identify the commutative property and identity element for multiplication and recognize multiplication as repeated addition**
- 3.18₄ model three digit subtraction with regrouping across zeros
- 3.19_{2,4} **solve problems using various computational methods, including calculator, paper/pencil, mental computation, and estimation**
- 3.20 use a calculator in situations involving four digit or higher numbers with two or more addends
- 3.21₄ **in computation and problem solving situations: identify missing information, verify solutions, and determine the reasonableness of results**
- 3.22₄ **multiply two and three digit by one digit numbers with and without regrouping**
- 3.23₄ **divide two and three digit by one digit numbers with and without regrouping**

Patterns and Relationships

- 3.24_{1,2,4,5,6,7,8} **identify patterns within the number system, including numerical operations using the calculator (e.g., odd+odd=even, even+odd=odd)**
- 3.25_{k,1,2,4} **analyze a given pattern using concrete objects and pictures, and then create a pattern with the same attribute; complete geometric patterns**

Probability and Statistics

- 3.26_{1,2,4} **experiment and describe the concepts of probability and chance, and list possible outcomes from a sampling**
- 3.27 using a calculator, determine the mean from collected data
- 3.28 as part of a problem solving situation, conduct a survey, organize the data, and display the findings on a bar and line graph
- 3.29₄ **given grid paper, collect data on a given topic and read, interpret, construct, and label a bar graph showing the results**
- 3.30 use a time line to display a sequence of events
- 3.31_{1,2,4} **read and interpret tables and tally charts**

Geometry and Spatial Sense

- 3.32_{4,5} **locate and graph/plot ordered pairs on a grid in the first quadrant**
- 3.33_{2,4,5,6,7,8,9,10,11} **given a model, draw an example of a flip, slide, and turn**
- 3.34_{1,2,4} **identify basic polygons including (pentagon, hexagon, and octagon) and components (sides and vertices)**
- 3.35_{4,5} **identify and construct right, obtuse, and acute angles**
- 3.36_{4,5,6} **compare areas of figures**
- 3.37_{1,2,4} **identify lines of symmetry**
- 3.38_{1,2,4} **identify congruent figures**

Measurement

- 3.39_{2,4} **estimate and compare linear measurements (e.g., length and height) using inch,**

- (precise to the nearest half inch) foot, yard, centimeter, and meter; then measure
- 3.40 estimate and measure results of mass/weight in ounces, pounds, grams, and kilograms
- 3.41 estimate capacity and measure with appropriate units (teaspoons, tablespoons, cups, pints, quarts, gallons, milliliters, and liters)
- 3.42^{1,2,4,6} **select and use appropriate units of measurement according to type and size of unit. (read scales of length, temperature, weight, or capacity)**
- 3.43 indicate the approximate size of units without using a ruler (e.g., width of little finger as centimeter, first joint of thumb as inch)
- 3.44 **estimate, read, and recognize common temperatures in Fahrenheit and Celsius (e.g., body temperature, hot and cold day, freezing and boiling points)**
- 3.45^{2,4,5,6,7,8} **read time to the five minute interval and to the nearest minute using an analog and digital clock and calculate elapsed time**
- 3.46 identify equivalent periods of time, including relationships between days, weeks, months, years, as well as seconds, minutes, and hours
- 3.47 read and write amounts of money

- up to \$100.00
- 3.48⁴ **role-play making change up to \$10.00**

Computer and Technology

- 3.49 use appropriate software to practice and master third grade instructional objectives in mathematics
- 3.50 practice proper finger placement for all letters on the keyboard.
- 3.51 use a mouse to draw simple graphics
- 3.52 identify the ways technology changes the lives of people in the community
- 3.53 use a calculator to solve whole number operations
- 3.54 use a calculator to solve problems with multiple four-digit (or greater) addends
- 3.55 use a calculator to produce patterns within the number system, including numerical operations
- 3.56 from a collected data, use a calculator to find the mean.
- 3.57 demonstrate the understanding of the concept that copyright law protects a person's (or company's) work
- 3.58 relate the input, output, and processing devices of a computer to their functions
- 3.59 use graphing software to construct bar and line graphs

Grade Three Social Studies

The objectives for third grade encourage an understanding of community. The study of history will show community change over time due to technology, movement of people, and human interaction with the environment. The geographic factors that influence people's lives will be identified. The creation, exchange, and consumption of goods and services within the context of the community and within a child's experience will build economic understanding. Understanding of citizenship in a participatory democracy will be developed through problem solving and decision making. In all areas, collection, interpretation, and construction of data will be emphasized through the use of graphics such as maps, globes, charts, tables and graphs. The objectives for elementary West Virginia social studies may be integrated throughout the K-4 curriculum.

Civics

- 3.1^{4,5,6,7,8,9,10,11} **compare and contrast the**

lawmaking function of government to the legislative

- branch at local, state, and national levels
- 3.2_{4,5,8,9,10} compare and contrast leaders and their length of terms and qualifications in the executive branch of government at local, state, and national levels
- 3.3 research and identify laws passed for public safety (e.g., bicycle helmets, speed limits, handicapped access, fire regulations)
- 3.4 resolve classroom dilemmas by using the democratic process of majority rule
- 3.5₄ explain the significance of patriotic symbols, holidays, celebrations, and famous people (e.g., American flag, national anthem, Pledge of Allegiance, and Capitol)
- 3.6 identify people in the community who volunteer for public service
- 3.7_{4,9} explain how the government prints and coins currency
- 3.8 give examples of rules and laws that protect our health, our safety, our property, and make our lives more pleasant
- 3.9 develop rules for cooperative group work and attainment of group goals
- 3.10 set criteria for "fair" rules and identify characteristics of unfair rules
- 3.11 cite examples to show how groups and individuals can make a difference in the community
- 3.12_{5,6,7,8,9,10,11} identify functions of government and which officials are charged with various responsibilities
- 3.13 know what majority rule means and give examples of that concept in democracy
- 3.14 explain the concept of owning property and the rights and responsibilities of property ownership
- 3.15 explain the primary functions of county commission, city council, school board, branches of state legislature, and branches of Congress

- 3.16₁₀ list the qualifications at the federal level for being a member of the House of Representatives, the Senate, the President, and the lengths of their terms in office
- 3.17_{5,6,8} identify and explain the similarities and differences of various public officials (e.g., president of United States, mayor, governor)

Economics

- 3.18_{4,5,7,9} explain the purpose of property, personal, and income taxes, who pays taxes, and the consequences for not paying taxes
- 3.19₇ explain the relationship between government taxation and the provision of public services
- 3.20 explain the concept of scarcity by citing examples of limited supplies and scarce resources
- 3.21_{4,5,6,7,8,9,10,11} explain supply and demand with appropriate examples
- 3.22_{4,5,6,7,8,9,10,11} illustrate the concepts of goods and services by categorizing community workers who provide each; explain goods and services purchased through personal cost and those provided by government (tax) money
- 3.23_{4,6,7} describe how competition for products increases with advertising, availability, and transportation (e.g., printing press)
- 3.24 explain the concept of monopolies and how the government controls monopolies
- 3.25₄ trace the path of a product from the raw material to the consumer
- 3.26₄ explain why budgeting is a critical skill necessary for good management (e.g., personal, business, government)
- 3.27 analyze the purpose of various forms of transportation (e.g., tram, car, bicycle, truck, boat, plane, rocket) and identify how

tra, car, bicycle, truck, boat, plane, rocket) and identify how each of these impact our economy

- 3.28 identify activities that individuals can do to keep the environment clean

Geography

- 3.29^{4,5,6,7,8,9,10,11} given an appropriate map, utilize map skills to locate places using cardinal directions, symbols, grids/coordinates, and a scale
- 3.30^{4,6,9,10} compare and contrast climate, weather, and location to people's clothing, food, shelter, and jobs
- 3.31^{4,6,9,10} identify change over time using maps of the community and region
- 3.32⁴ identify major geographic features in North America (e.g., bodies of water, mountains, gulfs, straits, bays)
- 3.33 determine direction using a compass, the sun, and the stars
- 3.34^{6,8,9,11} identify geographic features (e.g., peninsulas, islands, continents, straits, mountains, rivers, deserts, oceans, seas, harbors, gulfs, forests, and oasis)
- 3.35 locate all states and capitals on a blank United States map
- 3.36^{4,5,6,11} given a map, identify north, south, east, west, borders, lines of longitude and latitude, equator, north and south poles, and time zones

History

- 3.37 make historical inferences by analyzing artifacts and pictures
- 3.38^{4,8,11} research and report on major inventions (e.g., printing press, steam engine, cotton gin, reaper) and indicate their impact upon society
- 3.39^{4,5} explain the historical significance of major events, people, and their contributions as it relates to specific events
- 3.40^{6,7,9} investigate ways the present

culture is similar to and different from the culture of Native Americans and people of other historical time periods (e.g., source of food, clothing, shelter, products used)

- 3.41⁴ using appropriate news sources, draw conclusions and inferences about current events
- 3.42 explain how diversity in the heritage, culture, ideas, and opinions of others is important
- 3.43 explain the impact that railroads and other forms of transportation had on western expansion
- 3.44⁵ recognize portions of famous speeches and writings (e.g., John F. Kennedy- inaugural address, Martin Luther King- "I Have a Dream.")

Study Skills

- 3.45^{4,7,10} create and use graphs, charts, maps and other data sources to illustrate the use of resources, the demand for products, the supply of goods and services
- 3.46^{4,5,6,7,8,9,10,11} read and interpret data from various types of maps, globes, charts, graphs, and timelines (e.g., population, products, climate)
- 3.47^{4,5,6,7,8,9,10,11} analyze and construct timelines, charts, and graphs to interpret historical data
- 3.48^{4,8} sequence a series of pictures that reflect historic change (e.g., transportation, technology, agriculture)
- 3.49 organize information from various reference sources to prepare short reports
- 3.50^{6,11} use and organize information on time lines to sequence events in history

Computer/Technology

- 3.51 use graphics software to create graphs and charts
- 3.52 use appropriate software to practice and master third grade instructional objectives in social studies

3.53 practice proper finger placement for all letters on the keyboard 3.54 use a mouse to draw simple graphics 3.55 read and interpret graphs and charts 3.56 identify the uses of technology in the community	3.57 demonstrate the understanding of the concept that copyright law protects a person's (or company's) work 3.58 relate the input, output, and processing devices of a computer to their functions

Grade Three Science

The Coordinated and Thematic Science (CATS) Three objectives build upon problem-solving and experimentation and move into a more in-depth study of science. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy in the fields of biology, chemistry, physics, and earth sciences. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of the major science themes of systems, changes, and models. Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated in all activities. CATS Three highlights careers, the beginning of the study of geology and astronomy. Collecting materials, testing the materials, recording data and developing concepts related to physics and chemistry are introduced to expand investigate abilities that lead to logical conclusions.

Nature of Science

- 3.1 discuss the ways science is a search for answers and an understanding of the world (e.g., ask questions about your role in your world with litter and pollution)
- 3.2_{4,5,6,7} **given the science-related careers of a nurse, doctor, dentist, x-ray technician, etc., state the roles each plays in a community**
- 3.3_{4, 5, 6, 7, 8, 9, 10, 11} **explore objects and events by attributes (e.g., shape, color, texture)**
- 3.4 differentiate natural changes from man-made changes
- 3.5 probe deeply into natural phenomena by asking and answering questions about the environment (e.g., oceans, landforms, volcanoes, weather)
- 3.6 use a variety of communication techniques (e.g., charts, bar graphs, pie graphs, models, written descriptions)
- 3.7 realize that science is never

finished by observing changes in the environment (e.g., weather cycles, energy cycles, life cycles, rock cycles)

- 3.8 recognize that a solution to one scientific problem often creates new problems (e.g., recycling, pollution, conservation, waste disposal)

Scientific Attitudes/Habits of Mind

- 3.9 ask and answer questions while recognizing interactions that further an appreciation and joy of discovery of the natural world
- 3.10 demonstrate innate curiosity, initiative, and creativity by constructing models to investigate their environment
- 3.11_{4, 5, 6, 7, 8, 9, 10, 11} **be in awe and wonder of the patterns, variations, and interactions of natural objects in the environment (e.g., food chain, rocks and minerals)**
- 3.12 trust observations as a basis for taking risks involved in new tasks

- and skills
- 3.13 listen to and be tolerant of different viewpoints by engaging in collaborative activities and be willing to modify ideas when new and valid information is presented
 - 3.14 continue probing phenomena until questions are resolved (e.g., properties of matter, motions of sun and moon and planets, adaptations of plants and animals)
 - 3.15 recognize that developing solutions to problems takes time, patience, and persistence
 - 3.16 recognize that science includes both individual and cooperative ventures (e.g., read about scientific discoveries, on-going group investigations)

Scientific Processes/Thinking Skills

- 3.17^{4,5,6,7,8,9,10} sort, classify, and compare materials based on useful properties (e.g., magnetism, density, solubility, and conductivity)
- 3.18^{4,5,6,7,8,9,10,11} given a set of objects, group or order the objects according to an established scheme (e.g., celestial objects, patterns of motion, constellations)
- 3.19^{6,8,11} given a set of events, objects, shapes, designs, or numbers, find patterns of constancy or regularity
- 3.20^{4,5} apply mathematical skills and use metric units (e.g., graphing, addition, subtraction, multiplication, division, and measurement of length and volume of liquid samples)
- 3.21^{4,5,6,7,8,9,10,11} establish a data table, graph, map, or diagram and use it to answer questions (e.g., volume, temperature, and rates of freezing, melting, and boiling)
- 3.22 support statements with facts (e.g., found in nature books, magazines, and the Internet)

- 3.23^{4,5,6,7,8,9,10,11} construct predictions and make inferences based on patterns of evidence
- 3.24^{4,5,6,8,9,10,11} when collecting and observing things around you, look for changes and question what may cause the change (e.g., the effect of push or pull on a moving object, motion related to points of reference, falling bodies, fossils, and weather maps)
- 3.25⁷ relate an organism's pattern of behavior to the nature of its environment (e.g., the kinds and numbers of other organisms present, the availability of food, and the physical characteristics of the environment)
- 3.26^{4,7,10} test variables (e.g., those that effect plant growth, speed, action of water on soil, and shadow formation)

Laboratory Investigations/Hands-On Learning

- 3.27 engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and laboratory skills
- 3.28^{4,5,6,7,8,10,11} use scientific instruments and everyday materials to investigate the natural world (e.g., graduated cylinder, hand lens, thermometer, bulbs and batteries, tuning fork, and calculators)
- 3.29 use safe and proper techniques for handling, manipulating, and caring for science materials

Science Themes and Subject Matter

- 3.30 develop an understanding of the scientific themes of systems, changes, and models (e.g., systems consists of many parts that interact with one another and give rise to new properties or functions; change occurs gradually, repetitively, or

- randomly; a model is a picture, description, or simulation of the real thing)
- 3.31 understand that the study of living and non-living objects in the natural world integrates living organisms, earth materials, and physical properties of matter
- 3.32 establish connections across the curriculum (e.g., integrate science with mathematics, social studies, language arts, arts, and/or physical education)
- 3.33_{4,5,6,8,10,11} **compare, sort, and group objects according to solids, liquids, gases, and mixtures - systems**
- 3.34_{4,5,6,7,8,9,10,11} **compare and contrast chemical and physical changes - systems**
- 3.35_{4,5,6,7,8} **identify the structures of living things, including their systems, and explain their functions (e.g., roots absorb water, circulatory system to move materials) - systems**
- 3.36_{5,7,9} **relate the structures and behaviors of living organisms to the environment in which they live (e.g., beaks and feet in birds, seed dispersal, camouflage, different types of flowers -systems**
- 3.37_{5,6,7,8,9,10} **describe the relationships among the plants and animals in a closed system of interdependent organisms (e.g., aquariums, terrariums) - systems**
- 3.38_{5,6,7,8,9,10} **identify relationships among organisms in an ecosystem (e.g., sequencing food chains, behavior, adaptations, factors that effect populations, predator-prey relationships -systems**
- 3.39_{4,5,6,7} **observe, measure, and record changes in living things (e.g., growth and development, variations within species) - changes**
- 3.40_{4,5,6,7,8} **manipulate, measure, diagram, construct, arrange, observe and discuss models of plant and animal structures and systems - models**
- 3.41_{5,6,8,10,11} **observe chemical reactions (e.g., Alka Seltzer and water, vinegar and baking soda) - systems**
- 3.42_{5,6,8,11} **recognize that moving objects must have a force exerted upon them (e.g., gravity, push or pull, unbalanced force) - systems**
- 3.43 **identify objects that appear to move or not move based upon the motion of other objects - systems**
- 3.44 **find out how the number of turns in an electromagnet affects the strength - systems**
- 3.45_{4,5,7,9} **show that matter can change phases (e.g., condensation, melting, evaporation) - changes**
- 3.46_{4,5,7,9} **relate changes in states of matter to temperature (e.g., water) - changes**
- 3.47_{5,6,8,10} **recognize energy transformations (e.g., mechanical to heat, electrical to heat) - changes**
- 3.48 **recognize that it takes work to move objects over a distance - models**
- 3.49 **recognize that speed depends on distance and time - models**
- 3.50_{4,5,7,9} **construct models related to the structure of solids, liquids, and gases - models**
- 3.51_{4,6,9,10,11} **identify properties of minerals - systems**
- 3.52 **explain how igneous, sedimentary and metamorphic rocks are formed - systems**
- 3.53 **describe three layers of the Earth - systems**
- 3.54₄ **identify and describe the various features of the Earth's crust (e.g., plateaus, plain, and valleys) - systems**
- 3.55_{4,6,7,8,9} **explain how the rotations of the Earth causes day and night - systems**
- 3.56_{4,6} **explain how the revolution of Earth and the tilt of Earth's axis causes the seasons - systems**
- 3.57 **plan and carry out investigations to show how shadows are formed**

- *systems*
- 3.58 describe the similarities and differences among the planets - *systems*
- 3.59_{5,6,7,8,9,10,11} describe the size and surface of the Sun, Moon and Earth - *systems*
- 3.60₄ relate changes in the environment to the water cycle - *changes*
- 3.61₁₀ associate fossils as a record of time (e.g., what organisms once lived on Earth, where they lived) - *changes*
- 3.62₁₀ move through a simple time line illustrating changes on the Earth over the past 50 million years - *changes*
- 3.63_{5,8} describe weather changes by seasons - *changes*
- 3.64_{4,5,7,10} using water and wind explore the eroding of different materials (e.g., sand, mud pile and rocks) - *changes*
- 3.65 describe how volcanoes and earthquakes change the Earth - *changes*
- 3.66_{4,6} recognize the movement of the Sun and Moon in relationship to the Earth's position - *changes*
- 3.67₄ recognize the existence of constellations and their changes through the seasons - *changes*
- 3.68₁₀ make a model of a fossil and review fossil formation - *models*
- 3.69_{6,7} design a collage that represents how Earth's resources are used in every day life (e.g., water, wind, rock, soil, and minerals) - *models*
- 3.70_{7,8,10,11} identify land features using a topographical model or map (e.g., mountains, rivers, valleys, lakes, glaciers, and volcanoes) - *models*
- 3.71_{7,8,9} explain using models the phases of the Moon and eclipses - *models*
- 3.72_{5,6,9,11} build a weather station and use to collect and record measurable data (e.g., temperature, wind, direction, wind speed, and precipitation)

- *models*

- 3.73_{4,6,7,8,9,10,11} read a weather chart or map - *models*

Science History

- 3.74 study the lives and discoveries of scientists of different cultures and backgrounds (e.g., find articles, videos, and books about specific scientists, their discoveries, and their equipment: George Washington Carver, Luther Burbank, John Audubon, Isaac Newton, and Madame Curie and take field trips to places where scientists work)
- 3.75 recognize that science changes over time (e.g., weathering, new plants and animals appear)
- 3.76 realize that scientists will always have questions about the world (e.g., how big is the world, when did it start, how old is it)

Science, Technology and Society

- 3.77 examine that there are many science-related careers through the use of speakers, field trips, audio-visual, and/or printed material (e.g., allergist, environmentalist)
- 3.78 examine that science skills are used in careers not usually related to science (e.g., animator, transportation engineers)
- 3.79 research how technology has positively or negatively affected the quality of life in West Virginia and the world (e.g., Biosphere II, "skyglow" light pollution)
- 3.80 examine how common daily events involve science (e.g., mail delivery, television)
- 3.81 develop respect and responsibility for the environment by recognizing the interrelationship of living and non-living things and engaging in conservation practices

Computer/Technology

- 3.82 use appropriate software to practice and master third grade

3.83	instructional objectives in science practice proper finger placement for all letters on the keyboard	3.89	communications, agriculture) demonstrate understanding of the concept that copyright law protects a person's (or company's) work
3.84	use a mouse to draw simple graphics	3.90	relate the input, output, and processing devices of a computer to their functions
3.85	use appropriate software to practice reading, interpreting, and analyzing the data on a chart, graph, and table	3.91	using the graphing application of appropriate software, create tables and/or bar graphs
3.86	use appropriate software to practice drawing conclusions, making predictions, and making inferences based on data from a chart, graph, and table	3.92	use a calculator to perform mathematical functions in data analysis
3.87	use appropriate software to practice determining the length of an object	3.93	use a variety of instruments (e.g., probes, thermometers, measuring devices) to perform measurements and record data
3.88	identify the uses of technology in the community (e.g. health care,		

Grade Four

English Language Arts

The goal of the fourth grade English Language Arts curriculum is to develop readers and writers who are independent, self-motivated, critical thinkers who take responsibility for their own learning. Students will learn to critically evaluate what they read, to express themselves clearly in speaking and in writing, to gather and use information, and to utilize strategies to be applied in all content areas. At this level, children are provided with a variety of opportunities to interact with a wide range of literary forms, setting the foundation for lifelong reading.

The curriculum has been developed in such a way as to encourage integrated English Language Arts instruction across the curriculum, thus enabling students to make connections to all subject areas. A wide variety of instructional activities that address individual student needs and learning styles are to be provided.

Listening/Speaking

- 4.1_{1,2,3,5,6,7,8} demonstrate skill in using conventions of English (e.g., synonyms, antonyms, homonyms, word meanings, subject/verb agreement, adjectives, adverbs, and pronouns)
- 4.2_{1,2,3} given a dictated paragraph, recognize intended audience
- 4.3_{1,2,3} given a dictated narrative, draw conclusions/infer details related to setting, characters, problem, plot, theme, point of view, and author's purpose
- 4.4₃ given a dictated paragraph, determine meaningful titles
- 4.5_{2,3,5,6,7,8} given a narrative, distinguish between factual information and information based on opinion
- 4.6_{2,3,5,6,7,8} given a dictated paragraph, identify the stated or implied main idea
- 4.7_{1,2,3,5,6,7,8} given a narrative or set of directions, identify stated details
- 4.8₃ given a narrative, paraphrase, summarize, and ask appropriate questions regarding content
- 4.9_{1,2,3,5,6,7,8} recognize the sequence of events in a story or set of directions
- 4.10 given a set of directions, draw conclusions/infer specific information

- 4.11 listen to a variety of literary forms
- 4.12 given oral text, listen to, record, and state factual information
- 4.13 contribute to group discussions
- 4.14 seek ideas and opinions of others
- 4.15 using oral communication, form and support opinions
- 4.16 given a topic, organize and use subject-related information and vocabulary in an oral presentation
- 4.17 make an oral presentation using appropriate volume, pitch, and rate of speech
- 4.18 after differentiating between active listening and just hearing, demonstrate appropriate listening/speaking behaviors (e.g., using communication technologies)

Reading Comprehension

- 4.19_{K,1,2,3,5,6,7,8,9,10,11} read literary works by national and international authors to include, but not limited to: legends, folktales, biographies, historical fiction, and WV authors
- 4.20_{2,3,5,6,7,8,9,10,11} identify explicitly stated information/details including, but not limited to: story elements (e.g., setting, character, plot), a set of directions, functional reading (e.g., invitations, bulletins), and expository text
- 4.21_{K,1,3,9,10} locate and order events in a

- story (e.g., first, second, third) or identify missing items in a sequence of events
- 4.22_{K,1,2,3,5,6,7,8,9,10,11} recognize characteristics of a fictional and nonfictional story (e.g., fairy tales, mysteries, vs. true stories)
- 4.23_{3,11} scan a short passage for key words to answer a question
- 4.24_{3,11} skim a short passage for an overview of the material
- 4.25_{K,2,5,6,8,9,10} identify theme and main idea of a story
- 4.26_{K,2,3,5,6,7,8,11} draw conclusions and make inferences regarding information related to story elements, functional selections, informational selections, or expository text
- 4.27_{2,3,5,9,10,11} identify and/or draw conclusions regarding details and the purpose of a set of directions
- 4.28_{2,3} determine an appropriate title for a reading selection (e.g., expository text, story, biography)
- 4.29_{K,2,3,5,6,9,10,11} make predictions based on information provided
- 4.30_{6,7,8,10} identify characteristics of fact versus opinion
- 4.31_{9,10} read and make use of information in a functional selection or expository text
- 4.32_{K,1,2,3,5,6,7,8,9,10,11} use context clues to determine word meaning
- 4.33 use prior knowledge to recognize the topic of a story
- 4.34 recognize different organizations of paragraphs (e.g., main ideas with details, how things are alike or different, how something has changed)
- 4.35 identify cause and effect related to a given event
- 4.36 compare/contrast likenesses and differences of words, objects, and ideas
- 4.37 develop generalizations regarding story elements and relate facts to content
- 4.38 experience content through imagery (visualizing)

- 4.39 recognize non-literal meanings (e.g., similes, metaphors, analogies, idioms, puns)
- 4.40 paraphrase, summarize, compose questions, and make inferences about material read
- 4.41 identify nonverbal symbols (e.g., #, &, etc.)
- 4.42 choose and respond to a variety of reading material for pleasure and information

Reading Vocabulary

- 4.43_{2,3,5,6,7,8,9,10,11} recognize synonyms, antonyms, homonyms, and homophones for identified vocabulary words that are either presented alone or within a group of words
- 4.44_{2,3,5,6,7,8,9,10,11} recognize the correct meaning of a word with multiple meanings when presented in text
- 4.45_{K,2,3,5,6,7,8,9,10,11} apply structural analysis and context clues to decode and encode words
- 4.46 identify and use content area vocabulary given a variety of reading material
- 4.47 increase the number of recognized words presented in text

Writing

- 4.48 demonstrate proper manuscript and cursive techniques (e.g., posture, paper placement, pencil grip, letter formation, slant, letter size, spacing, rhythm, and alignment)
- 4.49 use the writing process (e.g., prewriting, drafting, revising, editing, and publishing) across the curriculum
- 4.50 develop various types of writing including, but not limited to, narrative, informative, and persuasive (e.g., paragraphs, stories, letters, and newspaper articles)
- 4.51 produce original writing samples related to creative arts including but not limited to poetry, journal entries, and plays

- 4.52_{7,10} using complete sentences, write a composition with a clearly identified beginning, middle, and end
- 4.53_{7,10} produce a composition with a main idea and specific, relevant details
- 4.54_{7,10} using complete sentences, write a composition that is focused, coherent, and has a logical progression of ideas
- 4.55 use electronic and traditional editing strategies to spell words correctly (e.g., proper nouns, in and inn [homophones])

Spelling

- 4.56 correctly spell basic sight words and frequently used words
- 4.57 identify and correctly spell homophones
- 4.58 use syllabication rules to spell words correctly
- 4.59 correctly spell words with consonant sounds including silent consonants, consonant digraphs and doubling the final consonant to add -ing
- 4.60 correctly spell words using various vowel patterns (e.g., silent vowels, vowel diphthongs, silent e when -y or -ing are added, and vowel digraphs)
- 4.61 make structural changes as needed in root (base) words (e.g., -y to -i before adding -ed)
- 4.62 apply spelling rules to the addition of prefixes and suffixes
- 4.63 correctly spell irregular verbs and irregular plural nouns (e.g., knew, known, teeth, wolves)
- 4.64 correctly spell compound words
- 4.65 given a contraction, correctly identify the two words that form that contraction; given two words, combine them into a correctly spelled contraction
- 4.66 correctly spell abbreviations
- 4.67 given a word, determine the origin of its meaning to correctly spell it
- 4.68 correctly spell multi-syllabic words

Language

- 4.69_{1,2,3,5,6,7,8,9,10,11} use capitalization skills correctly (e.g., titles, closing of a letter, greeting of a letter, first word in a quotation, first word of sentence, proper nouns, pronoun "I")
- 4.70_{1,2,3,5,6,7,8,9,10,11} use punctuation skills correctly (e.g., quotation marks, end marks, commas in a series, apostrophes, correspondences, contractions, abbreviations, separation of clauses, underlining) in narratives and friendly business letters
- 4.71_{1,2,3,5,6,7,8,9,10,11} use various forms of common and proper nouns and pronouns correctly (e.g., subjective, objective, number, gender)
- 4.72_{1,2,3,5,6,7,8,9,10,11} use various forms of verbs correctly (e.g., verb tense, subject/verb agreement, helping verbs, forms of be, linking verbs)
- 4.73_{3,5,6,7,8} distinguish between and correctly use adjectives and adverbs (e.g., making comparisons)
- 4.74 distinguish between proper and improper usage (e.g., that there)
- 4.75_{1,2,3,5,6,7,8,9,10,11} identify and use correct sentence structure (e.g., refrain from use of sentence fragments, awkward and run-on sentences)
- 4.76 identify and use simple and compound subjects and predicates
- 4.77_{3,5,6,9} combine sentences into a logical, clear sentence using such words as "and" and "however"
- 4.78_{3,5,6,7,9,10,11} identify and use correct paragraph structure (e.g., indent, topic sentence, closing sentence, supporting sentences, recognizing sentences that do not belong)
- 4.79_{1,2,3,5,6,7,8,10,11} identify purpose of various types of paragraphs (e.g., narrative, informative, persuasive)
- 4.80 identify and use appropriate dictionary skills (e.g., word

- meaning, guide words, syllabication, pronunciation guide)
- 4.81 identify appropriate reference sources for specific information (e.g., dictionary, encyclopedia, atlas)
- 4.82 identify and use various sentence types (e.g., declarative, interrogative, exclamatory, imperative)

Study Skills

- 4.83_{5,6,7} identify and use sources of different types of information (e.g., dictionary, encyclopedia, newspapers, card catalog)
- 4.84_{3,5,6,7,8,9,10,11} recognize and use dictionary skills (e.g., use of guide words, word meaning, pronunciation guide, syllabication, alphabetical order)
- 4.85_{3,8} use graphic sources to interpret and organize information (e.g., tables, graphs, maps, diagrams, timelines, web)
- 4.86_{5,6,7} acquire organizational skills to manage school materials, personal time management, and information to be studied
- 4.87 follow written directions with multiple steps
- 4.88 practice and use test-taking strategies (e.g., read all directions, read for key words, budget your time, read all possible choices)
- 4.89_{5,6,7,8,9,10} identify parts of a book and the information therein (e.g., glossary, index)
- 4.90_{8,9,10} know the purpose of and use a book's table of contents (e.g., locate specific chapters,

determine the general idea of the book, locate specific information, infer the content of a chapter)

- 4.91_{3,8} organize items that belong under one heading
- 4.92 use a library and its reference sources (e.g., card catalog, computer listing, electronic retrieval systems)

Computer/Technology

- 4.93 use appropriate software to practice and master fourth grade English language arts instructional objectives
- 4.94 demonstrate proper finger placement for all keys on a keyboard
- 4.95 using a word processor, create a one (or more) paragraph document
- 4.96 identify ways technology is used to access information
- 4.97 demonstrate the understanding that the violation of copyright law is a crime
- 4.98 select and use appropriate software and/or other technologies to locate and use reference sources (4.82)
- 4.99 use the spell check function in a word processor (4.56)
- 4.100 use graphic software to create, read, interpret and organize information in the form of tables, graphs, diagrams and charts (4.86)
- 4.101 using a word processor, input types of writing such as paragraphs, stories, letters, and newspaper articles (4.51 and 4.52)

Grade Four Mathematics

The fourth grade objectives emphasize critical thinking skills to create independent problem solvers who possess a personalized set of skills and strategies to solve problems in everyday life. Concepts which are stressed include: multiplication and division of two and three digit numbers, construction and description of objects from different perspectives, estimation, reading temperatures, description of possible outcomes in a given situation, use of calculators and computers, and describing mathematical relationships and patterns in other content areas and the real world. Additional concepts include adding and subtracting like fractions, multiplication of fractions, and adding and subtracting decimals.

Number Theory and Number Sense

- 4.1₅ compare and order two or more whole numbers through 1,000,000
- 4.2_{5,6} read, name, and write nine digit numbers and identify place value for each digit utilizing standard and expanded form
- 4.3₆ identify 1,000 more and 1,000 less than a given number
- 4.4_{3,5,6,7,8} estimate to the nearest 1000 using front-end digit and rounding, compatible numbers, and reasonableness
- 4.5_{2,3} identify odd and even numbers

Fractions and Decimals

- 4.6_{1,2,3,5} identify fraction models that are part of a whole or part of a group
- 4.7_{3,5} compare and order fractions with like and unlike denominators
- 4.8₅ add and subtract like and unlike fractions using concrete materials and paper and pencil
- 4.9₅ add and subtract fractions and reduce to lowest terms
- 4.10₅ given a fraction model: read and write the fraction or mixed number, change an improper fraction to a mixed number, and change a mixed number to an improper fraction
- 4.11₅ read, write, compare, order, and identify place value and pictorial representations of decimals expressed as thousandths
- 4.12 identify and represent equivalent fractions and relate fractions to

- decimals using concrete objects
- 4.13 change a fraction into a decimal using a calculator
- 4.14 add and subtract decimals to tenths, hundredths, and thousandths
- 4.15 round decimals to the nearest whole, tenth, and hundredth
- 4.16 solve problems using fractions and decimals

Whole Number Operations and Computations

- 4.17_{5,6,7,8} add and subtract two, three, and four digit whole numbers and money with and without regrouping
- 4.18_{2,3} choose the appropriate method to solve a problem: paper/pencil, mental math, estimation, and calculators
- 4.19_{3,5} use concrete materials to demonstrate and identify the associative property of addition and multiplication, the identity element and commutative property of multiplication (fact families)
- 4.20₆ multiply two and three digit numbers by two and three digit numbers with and without regrouping
- 4.21₆ divide two and three digit numbers by one and two digit numbers with and without regrouping
- 4.22 introduce and use the order of operations (e.g., parenthesis, multiplication/division, and addition/subtraction)
- 4.23 round to the nearest dollar, hundreds, and thousands

Patterns and Relationships

- 4.24_{k,1,2,3,5,6,7,8} **solve problems involving pattern identification and completion of patterns**
- 4.25 describe and represent relationships with tables, graphs, and rules

Probability and Statistics

- 4.26 understand and reason about the use and misuse of statistics in our society. Given certain situations and reported results, identify faulty arguments or misleading representations of data
- 4.27 as a part of a problem solving situation, conduct a survey, organize data, and display the findings on a bar, line, and circle graph
- 4.28_{3,5} **collect, organize, display, read, and interpret data from a problem solving situation in line graphs, bar graphs, tally charts, and tables with scale increments of one or greater than one**
- 4.29₅ list all possible outcomes for an experiment using a tree diagram (e.g., tournaments and roll the dice)
- 4.30_{5,6,7} determine mean, median, mode, and range from collected data
- 4.31_{3,5,6,7} **identify coordinate locations**
- 4.32_{1,2,3} **identify plane figures and their components (sides and vertices)**

Geometry and Spatial Sense

- 4.33₅ **construct, label, compare, and classify acute, right, and obtuse angles**
- 4.34 **compare and contrast quadrilaterals (rectangle, square, parallelogram, trapezoid, and rhombus)**
- 4.35 identify and construct lines which intersect, are parallel, and are perpendicular
- 4.36_{6,7} using a compass, construct a circle, and draw and label the parts of a circle (center, radius, chord, and diameter)
- 4.37 describe three dimensional

objects from different perspectives (e.g., view of face, view of vertex)

- 4.38 model and use a protractor for measuring angles
- 4.39_{2,3,5,6,7,8,9,10,11} **identify rotations and reflections**
- 4.40_{1,2,3} **identify symmetry**

Measurement

- 4.41_{2,3,5,6,7} **compare, estimate, and measure length using customary and metric units**
- 4.42₅ solve problems involving perimeter, area, volume, and surface area
- 4.43_{3,5,6} **compare areas of figures**
- 4.44 compare inches and centimeters, quart and liter, yard and meter, pound and kilogram
- 4.45 identify the major United States time zones, and their relationships to each other
- 4.46_{2,3,5,6,7,8} **calculate elapsed time**
- 4.47 **create and solve problems involving addition, subtraction, multiplication, and division of money amounts using various computational methods such as calculations, paper/pencil, mental computation and estimation**
- 4.48₃ **count coins and bills and identify correct change**
- 4.49_{1,2,3,5,6} **read scales of length, temperature, weight, or capacity and select appropriate units**

Computer and Technology

- 4.50 use appropriate software to practice and master fourth grade instructional objectives in mathematics
- 4.51 practice proper finger placement for all keys on a keyboard
- 4.52 identify ways technology is used to access information
- 4.53 use a calculator to change a fraction into a decimal
- 4.54 use a calculator to solve operations with money
- 4.55 demonstrate the understanding that the violation of copyright law

- 4.56 is a crime
use graphing software to construct tables, bar, line, and circle graphs
- 4.57 use a calculator to find the mean, mode, and range of collected data

Grade Four Social Studies

The program at the fourth grade level will focus upon the growth of America through its colonization, assimilation of immigrant groups, development of improved technology, and major historical figures. Course content will include the influence of geographic factors upon the diverse cultures that settled in America through time. The democratic process will be incorporated into classroom activities. The study of economics will emphasize the relationship among geographic factors, natural resources, transportation, advertising, and the work force. In all areas, collection, interpretation and construction of data through the use of graphics such as maps, globes, charts, tables and graphs will be emphasized.

Civics

- 4.1_{3,5,6,7,8,9,10,11} identify the functions of the three branches of national government and compare to local and state levels.
- 4.2_{5,7,8,9} explain the role of voting in the democratic process and practice the voting process by participating in a class or school election, identifying the rights and responsibilities of citizens, and knowing the legal voting age
- 4.3_{6,7,11} explain the rights of minorities in the democratic process and the right to dissent responsibly
- 4.4₃ research public documents to determine the significance of patriotic symbols, holidays, celebrations, and famous people
- 4.5_{3,8} identify public agencies in the community that provide services and investigate opportunities for volunteerism
- 4.6 identify historical conflicts concerning individual rights and how those conflicts were resolved
- 4.7_{7,11} explain the make-up of United States Congress and the relationship between the Senate and House of Representatives
- 4.8 compare and contrast the differences between city, county, state, and national governments
- 4.9₃ list the primary responsibilities of public officials (e.g., FBI, sheriff, school superintendent, mayor)
- 4.10 compare and contrast the similarities of various branches of government on local, state, and national levels
- 4.11_{3,5,8} contrast examples of elected and appointed officials (e.g., president is elected, state superintendent is appointed)
- 4.12 understand the difference between public sector and private sector employment (e.g., postman-public, teacher-public, deputy sheriff-public, artist-private, welder-private, store owner-private)

Economics

- 4.13 compare and contrast the relationship between geographic factors, available resources, and transportation in determining how people make a living
- 4.14_{3,5,6,7,8,9,10,11} give examples of people as consumers and producers of goods and services in the public and private sectors
- 4.15_{3,6,7} using print and media sources, analyze advertisements and

- their impact upon consumer choices
- 4.16 explain the concept of "trade-off" (e.g., developing hypothetical budgets in simulated situations)
- 4.17^{3,5,7,9} investigate the various kinds of taxes and their relationship to services
- 4.18^{5,6,7,10} predict how competition in the market place affects prices
- 4.19^{5,7,9} explain the concept of taxation (e.g., tax assessment, services provided)
- 4.20^{3,10} research the origin of American currency and how it is regulated
- 4.21 analyze product labels (e.g., ingredients, quality, and information omitted) and compare prices
- 4.22 explain how each new form of transportation affected society and the economy
- 4.23 interpret how the availability of transportation on roads and waterways impact the production and marketing of certain products

Geography

- 4.24 compare and contrast geographic factors to development of transportation routes and settlement patterns in the Americas
- 4.25 identify physical barriers to transportation in the Americas and how people adapted to the barriers (e.g., Appalachian and Rocky Mountains, Isthmus of Panama)
- 4.26^{6,9,10} analyze and compare the effects of geographic factors upon people's jobs, food, clothing, shelter, services, and interaction with the outside world
- 4.27^{5,8} contrast the physical, economic, and political changes caused by geographic conditions and human intervention
- 4.28 use geographic terms to describe America's physical

- features (e.g., mountains, rivers, grassland, oasis)
- 4.29 identify and locate North, South, and Central American countries and bodies of water on a blank map
- 4.30 identify geographic factors which affect population density

History

- 4.31^{3,6,7} describe the cultures of the colonists and Native Americans and list the changes that occurred when they came into contact with one another
- 4.32^{5,6,7,8,9,11} create a timeline showing the arrival of major immigration groups and describe the influence of each culture upon American society
- 4.33^{8,10,11} explain how major inventions eliminated some jobs (e.g., Pony Express/invention of the telegraph) and created the need for other jobs (e.g., telegraph operators)
- 4.34^{6,10} research events that led to the colonists' break with England and the fight for an independent nation (e.g., Sugar Act, Stamp Act, Boston Tea Party)
- 4.35 identify major leaders and events from America's colonization to the Civil War
- 4.36^{8,10,11} depict territorial expansion and population distribution in the United States through maps, charts, pictures, and research projects
- 4.37 identify the Presidents of the United States and their involvement with major historical events
- 4.38 list and identify the sequence of major United States conflicts
- 4.39 explain why maintaining historical records and landmarks is important to civilization
- 4.40 identify major United States historical figures, their contributions, and their involvement related to specific

- events**
- 4.41 **explain how African Americans came to America and list their accomplishments**

Study Skills

- 4.42^{7,10} **analyze a product chart for price comparison**
- 4.43^{3,5,6,7,8,9,10,11} **utilize map skills to locate places and to construct maps (e.g., symbols in a legend/key; lines of demarcation [Equator, Prime Meridian, latitude and longitude, time zones, borders, coast lines] scales; directions [cardinal and intermediate]; and geographic barriers)**
- 4.44^{3,5,6,7,8,9,10,11} **read, interpret, and construct special purpose American and other maps/globes, graphs, charts, and timelines**
- 4.45 **construct and use charts, graphs, tables, and grids to display data**
- 4.46^{3,5,6,8,10,11} **analyze and interpret information from pictures and news sources related to historical events and people**

- 4.47 **suggest appropriate reference sources to answer specific questions, collect information, and prepare short reports**
- 4.48 **sequence major historical events in United States history on a timeline (e.g., discovery of America, Revolutionary War, Civil War, Boston Tea Party)**
- 4.49^{3,5,6,7,8,9,10,11} **read and interpret graphs, charts, and timelines**

Computer/Technology

- 4.50 **use graphics software to create graphs and charts**
- 4.51 **use appropriate software to practice and master fourth grade instructional objectives in social studies**
- 4.52 **practice proper finger placement for all keys on a keyboard**
- 4.53 **identify ways technology is used to access information**
- 4.54 **demonstrate why violation of copyright law is a crime**

Elementary West Virginia Studies

The objectives for West Virginia Studies explore historic, geographic, economic, and civic concepts. These objectives shall be taught as a separate fourth grade unit. The relationship among geographic factors, settlement patterns, and economic development of West Virginia will be explored in this course. The cultural heritage of the various groups who settled West Virginia will be researched through classroom activities. The course content will reflect West Virginia's unique characteristics as well as its relationship to the nation.

Civics

- WV.1 **identify student's state, town, and address**
- WV.2 **identify state symbols, the state capitol, the Governor, celebrations and holidays, and famous West Virginians**
- WV.3 **recite the State Motto and State Song**
- WV.4 **identify the roles and functions of the government (e.g., legislative, executive, and judicial branches) at the local, county, and state**

levels

- WV.5 **explain why voting as a West Virginia citizen is a right, a privilege, and a responsibility**
- WV.6 **given a local problem, propose solutions and investigate opportunities for public volunteerism**

Economics

- WV.7 **identify the major occupations of people in the private and public sectors of our state**

- WV.8 identify the effect of natural resources and geographic features upon the economic development of counties and the state

Geography

- WV.9 locate West Virginia on a United States map and identify bordering states
- WV.10 locate student's county and county seat on a West Virginia map
- WV.11 locate and describe the four geographic regions of West Virginia
- WV.12 describe West Virginia's climate and weather
- WV.13 analyze the impact of West Virginia's geography on transportation, settlement, jobs, clothing, food, shelter, services, and interaction with the outside world
- WV.14 explain the effect of geography on the expansion and development of West Virginia

History

- WV.15 explain and trace the economic, social, and political history of West Virginia
- WV.16 describe the cultural life of West Virginia as reflected in folklore and heritage
- WV.17 compare and contrast lifestyles of West Virginians of yesterday and today

Study Skills

- WV.18 use maps to explore West Virginia's population, products, resources, transportation, state parks, forests, and scenic/recreational resources
- WV.19 find an absolute West Virginia location (e.g., using a grid system) and a relative location (e.g., direction and reference to neighboring states, rivers, and mountain ranges)
- WV.20 use reference sources to answer specific questions, collect information, and prepare short reports about West Virginia

Grade Four Science

The Coordinated and Thematic Science (CATS) Four objectives builds on the study of geology, astronomy, chemistry and physics. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy in the fields of biology, chemistry, physics and earth sciences. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of the major science themes of systems, changes, and models. Students will engage in active inquires, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated into all activities. CATS Four promotes cooperative learning, group decisions, cultural diversity, careers, and expands the development of hands-on exploration. Basic science concepts are developed and problem-solving abilities are augmented.

Nature of Science

4.1 explain that science is a search for truth and an understanding of the world 4.2 ^{3, 5, 6, 7} explore the role of science and science-related careers 4.3 ^{3, 5, 6, 7, 8, 9, 10, 11} design a model given a set of attributes (e.g., design a	fish) 4.4 explain the changes in nature given a series of pictures illustrating changes 4.5 probe deeply into natural phenomena by asking and answering questions about the environment (e.g., biomes,

- weather patterns)
- 4.6 use a variety of communication techniques (e.g., charts, bar graphs, pie graphs, models, reports)
- 4.7 realize that science is never finished by observing changes in the environment (e.g., seasons, energy cycles, life cycles, rock cycles, weathering, erosion)
- 4.8 recognize that a solution to one scientific problem often creates new problems (e.g., recycling, pollution, conservation, waste disposal, need for technology)

Scientific Attitudes/Habits of Mind

- 4.9 experience the joy of discovery of the natural world by developing questions and an understanding of the natural world which lead to investigations
- 4.10 demonstrate innate curiosity, initiative, and creativity by designing simple experiments (e.g., electrical circuits, evaporation and condensation)
- 4.11 be in awe and wonder of the patterns, variations, and interactions of objects in the universe (e.g., constellations, rock cycle, weather patterns)
- 4.12 trust observations of discoveries when trying new tasks and skills
- 4.13 listen to and be tolerant of different viewpoints by engaging in collaborative activities and modifying ideas when new and valid information is presented
- 4.14 continue probing phenomena until questions are resolved (e.g., motion of celestial objects, relationship of living things and habitat, transfer of energy)
- 4.15 recognize that developing solutions to problems requires persistence, flexibility, open-mindedness, and alertness for the unexpected
- 4.16 recognize that science includes both individual and cooperative ventures (e.g., interview scientists

and meteorologists, group investigation, and model building)

Scientific Processes/Thinking Skills

- 4.17^{5,6,7,8,9,10,11} sort, classify, and compare objects, and events based on properties (e.g., mass, volume, density, conductivity)
- 4.18^{3,5,6,7,8} given a set of objects, group or order the objects according to an established scheme
- 4.19^{5,6,8,10,11} apply mathematical skills and use metric units (e.g., graphing, multiplication, division, and measurement of length and volume)
- 4.20^{5,6,8,9} establish the variables and controls in an experiment
- 4.21^{3,5,6,7,8,9,10,11} construct a hypothesis when provided a problem (e.g., cause and effects of an event, based on formation of shadows)
- 4.22^{3,5,6,7,8,9,10,11} construct predictions and inferences based on patterns of evidence
- 4.23^{3,5,6,7,8,9,10,11} test variables (e.g., that effect plant growth, action of water in shaping the earth, and causes and effects of events).
- 4.24^{3,5,6,7,8,9,10,11} interpret data presented in a table, graph, or diagram and use it to answer questions and make decisions
- 4.25^{5,6,7,8,9,10,11} draw and support a conclusion based on patterns of evidence (e.g., weather maps, change of speed in a given amount of time, change in wave motions with changes in energy, and variation of plants)
- 4.26 support statements with facts (e.g., found in books, multimedia, Internet)

Laboratory Investigations/Hands-On Learning

- 4.27 engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of

- the instructional time to develop conceptual understanding and laboratory skills
- 4.28 use scientific instruments and everyday materials to investigate the natural world (e.g., observe the natural world using instruments such as a hand lens, microscope, telescope, thermometer, magnets, bulbs and batteries, graduated cylinders, calculators, computers)
- 4.29 demonstrate safe and proper techniques for handling, manipulating, and caring for science materials

Science Themes and Subject Matter

- 4.30 develop an understanding of the scientific themes of systems, changes, and models (e.g., systems consists of many parts that interact with one another and give rise to new properties or functions; change occurs gradually, repetitively, or randomly; a model is a picture, description, simulation, or equation which represents the real thing)
- 4.31 understand that the study of living and non-living objects in the natural world integrates living organisms, earth materials, and physical properties of matter
- 4.32 establish connections across the curriculum (e.g., integrate science with mathematics, social studies, language arts, arts, and/or physical education)
- 4.33^{3,5,6,7,8,9,10,11} compare, sort, and group objects according to buoyancy, magnetic properties, states of matter, density, solubility, conductivity and ability to react - *systems*
- 4.34^{3,5,6,7,8} identify the structures of living things including their systems, and explain their function (e.g., skeletons, teeth structures, and leaves) - *systems*
- 4.35^{3,5,7,9} describe the different characteristics of plants and animals which help them to survive in different niches and environments - *systems*
- 4.36^{3,5,6,7,8,9,10} describe the environments and conditions which are needed for the survival of living things (e.g., water, sunlight, soil, food, climate, correct habitat, environmental barriers) - *systems*
- 4.37^{3,5,6,7} classify living things according to their structures and functions (e.g., taxonomy) - *systems*
- 4.38^{3,5,6,7,8,9,10} review relationships among organisms in an ecosystem (e.g., fresh water, salt water, and terrestrial organisms and habitats, climate as related to biomes, food webs) - *systems*
- 4.39^{3,5,6} identify human uses of plants and animals (e.g., food sources, medicines) - *systems*
- 4.40 associate the behaviors of living things to external and internal influences (e.g., hunger, climate, seasons) - *systems*
- 4.41 identify cells in plants and animals (e.g., use hand lenses or microscopes to examine plant and animal cells) - *systems*
- 4.42 identify variations in structures and function within and among species of living things (e.g., different seeds, leaves, skeletons, different forms of reproduction, animal and plant structures) - *changes*
- 4.43^{3,5,6,7} recognize, compare, and/or sequence changes in living things (e.g., plant and animal life cycles) - *changes*
- 4.44 describe environmental barriers to the migration of animals - *changes*
- 4.45 construct and explain models of habitats, food chains, and food webs - *models*
- 4.46^{5,6,7,8,9,10,11} observe and investigate how properties can be used to identify substances (e.g., acids and bases, solubility, conductivity, magnetism) -

systems

- 4.47_{3,5,6,7,8,9,10,11} **examine simple chemical changes (e.g., tarnish, rust, burning) - changes**
- 4.48₁₀ **construct Bohr models of atoms - models**
- 4.49 **identify different forms of energy and describe energy transformation (e.g., electrical to heat, light to mechanical) - systems**
- 4.50 **examine properties of waves (e.g., transverse, longitudinal, frequency, wavelengths) - systems**
- 4.51 **relate motion to its properties (e.g., frame of reference, position) - systems**
- 4.52_{3,5,7,9} **relate changes in states of matter to energy transformation - systems**
- 4.53_{5,6,11} **predict and investigate the changes in motion produced when applied force is changed (e.g., increase/decrease in applied force, length of vibrating strings, length of time force is applied) - changes**
- 4.54_{3,5,7,9} **identify various changes in states (e.g., solids to liquids, liquids to solids, solids to gas) - changes**
- 4.55_{5,6,10,11} **use models to demonstrate heat, light, and sound (how produced, how changed, applications to every day living, how moved through system) - models**
- 4.56_{5,10} **construct simple electrical circuits (e.g., conductors, non-conductors, complete/incomplete) - models**
- 4.57_{6,9,10,11} **explain the relationship between the rate of cooling and crystal size of igneous rocks - systems**
- 4.58 **describe the Earth's atmosphere - system**
- 4.59₆ **state that air has mass, takes up space, and is made of molecules - systems**
- 4.60_{5,6} **identify parts of the solar system - systems**
- 4.61 **explain the reason why other planets are not always seen in**

the same position

- 4.62₅ **research evidence to discover the age of the earth - systems**
- 4.63₁₀ **associate fossils with the periods in which they were formed - systems**
- 4.64_{3,5,6,7,8,9,10} **locate and identify patterns of stars and their seasonal changes - changes**
- 4.65 **describe the orbits of the sun and moon - changes**
- 4.66₅ **compare and explain the relative time differences to erode materials (e.g., a sand pile, mud pile, rock pile) - changes**
- 4.67 **investigate the cause and effects of volcanoes, earthquakes, and landslides - changes**
- 4.68_{6,7,8,9,10,11} **enter weather data on weather charts and use the data to hypothesize how air temperature and humidity affect air pressure - models**

Science History

- 4.69 **study the lives and discoveries of men and women scientists of different cultures and backgrounds (e.g., Albert Einstein, Earl Core, Wright Brothers, Gerty Cori, Gertrude Elion, Albert Schweitzer, Lewis and Clark, John Muir)**
- 4.70 **recognize that science changes over time (e.g., discoveries of new ideas creates a need for new equipment, new equipment makes it possible to discover new ideas, new ideas may have positive or negative consequences)**
- 4.71 **realize that scientists will continue to have questions about the world (e.g., what is the smallest particle, what causes diseases, can humans live in space for a long time)**

Science, Technology, and Society

- 4.72 **explain that there are many science-related careers through**

- the use of speakers, field trips, audio-visual, and/or printed material (e.g., computer technician, food chemist)
- 4.73 explain that science skills are used in careers not usually associated with science (e.g., jewelry maker, pilot)
- 4.74 explain how technology has positively or negatively affected the quality of life in West Virginia and the world (e.g., rechargeable batteries, Great Lakes Zebra Mussels, oil spills and clean up)
- 4.75 research how common daily events involve science (e.g., flashlights, laser scanners, printed materials)
- 4.76 develop respect and responsibility for the environment by recognizing the interrelationship of living and non-living things and engaging in conservation practices
- Computer/Technology**
- 4.77 use appropriate software to practice and master fourth grade instructional objectives in science
- 4.78 practice proper finger placement for all keys on a keyboard
- 4.79 use appropriate software to practice reading, interpreting, and analyzing the data on a map, chart, graph, table, and diagram
- 4.80 use appropriate software to practice drawing conclusions, making predictions, and making hypotheses based on data from a map, diagram, chart, graph, and table
- 4.81 identify and demonstrate ways technology is used to access information
- 4.82 demonstrate understanding that the violation of copyright law is a crime
- 4.83 using the graphing application of appropriate software, create tables, charts, and/or graphs
- 4.84 use a calculator to perform mathematical functions in data analysis
- 4.85 use a variety of instruments (e.g., probes, thermometers, measuring devices) to perform measurements and record data

Grade Five

English Language Arts

English Language Arts at the fifth grade level is designed to expand and strengthen knowledge and abilities learned in the fourth grade and to prepare students for the sixth grade. Listening and speaking instruction prepares students for interaction and expression at school, at home, and, later, in the work place. Reading comprehension and vocabulary skills enable students to read on literal, interpretive, and critical levels for functional and recreational purposes. Writing, spelling, and language objectives provide instruction and opportunity to develop proficient written expression. Study skills help students interact with the world of information that will be much more complex when they become adults.

Listening/Speaking

- 5.1 distinguish difference between listening and hearing
- 5.2 recognize and exhibit oral communication skills (e.g., pitch, tone, rate)
- 5.3 identify and correct usage errors in oral communication (e.g., word choice, grammar)
- 5.4 exhibit appropriate speaking etiquette (e.g., speaking in turn, proper use of communication technologies)
- 5.5 use public speaking strategies to prepare formal and informal speaking presentations across the curriculum (e.g., oral report, recitation, dramatization)
- 5.6 exhibit appropriate audience etiquette in a variety of listening experiences
- 5.7 listen to a story and retell events in sequence
- 5.8^{1,2,3,6,7,8} listen to multi-step oral instructions and successfully complete a task(s)
- 5.9 supply missing step(s) in a set of oral directions
- 5.10^{6,7,8} listen to sentences to identify the meaning of a synonym, antonym, homonym, etc., by using context clues
- 5.11^{1,2,6,7,8} listen to oral communications and critique, evaluate, question, imagine and summarize about a selection
- 5.12^{2,3,4,7,8} use critical thinking to distinguish fact from opinion,

purpose, predict, draw conclusions, and compare or contrast information

- 5.13^{2,3,4,6,7,8} listen to specific information and interpret it to construct meaning in and beyond text
- 5.14^{6,7,8} relate personal experience to construct new meaning from information heard

Reading Comprehension

- 5.15^{1,2,3,4,6,7,8,9,10,11,12} read literary works by national and international authors to include but not limited to: article, autobiography, biography, fable, fairy tale, folk tale, legend, mystery, myth, novel, play, poetry, tall tale, historical fiction, science fiction, realistic fiction, humorous fiction, and fantasy
- 5.16^{6,7,8,9} locate factual information (e.g., details, events, sequences)
- 5.17^{k,2,4,6,8,9,10} determine the main idea in text to establish meaning and determine main idea inferred in text to establish meaning
- 5.18^{3,4,6,7,8,9,10,11} determine time/sequence using order words
- 5.19^{3,7,8,9,10,11} determine plot, style, mood, characterization to construct initial meaning
- 5.20^{k,1,2,3,4,8,9,10} analyze text to identify a sequence of events

- 5.21_{3,4,7,9,11} **determine a character's feelings, motives, and traits based on text**
- 5.22_{3,4,7,9,11} **interpret text to infer information about an event**
- 5.23_{8,9,10,11} **interpret text to draw conclusions about a person or event**
- 5.24_{k,2,3,4,6,7,8,9,10,11} **predict what will happen next in a story**
- 5.25_{2,3,8,9,10,11} **determine author's purpose by using tone, style, and technique**
- 5.26_{2,3,4,7,8,9,10,11} **determine the appropriate reading strategy (e.g., rereading) to acquire specific information**
- 5.27_{3,6,9,10} **identify how and where to locate additional information on a text topic (e.g., map, resource person, book, cartoon, drawing)**
- 5.28 **determine the meaning of a word using context clues**
- 5.29₁₀ **interpret the use of a rhetorical question in text**
- 5.30_{10,11} **interpret figurative language in text**
- 5.31_{k,3,6,7,8,9,10,11} **make hypothesis based on text**
- 5.32_{1,2,3,9,10} **read and apply directions for a specific task**
- 5.33_{8,9,10} **draw graphic organizers to reflect main ideas and supporting details**
- 5.34 **utilize paraphrasing and summarization to establish understanding of text**
- 5.35 **create an alternative ending to a story**

Reading Vocabulary

- 5.36_{2,3,4,6} **use context clues to determine meaning of an unknown word**
- 5.37_{7,8,9,10,11} **define synonyms**
- 5.38 **use context clues to find a synonym for an unknown word**
- 5.39_{2,3,4,6,7,8,9,10,11} **identify synonyms to improve quality of text**
- 5.40 **define antonyms**
- 5.41 **use context clues to find an antonym for an unknown word**
- 5.42_{2,3,4,6,7,8,9,10,11} **use context-clues to determine meaning of a**

multiple-meaning word

- 5.43 **choose the correct definition of a multiple-meaning word**
- 5.44 **recognize homophones (e.g., dear-deer, knight-night), and choose correct homophone for the context**
- 5.45 **recognize homographs (e.g., lead (to guide)-lead (a metal) and chose correct homographs for the context**
- 5.46 **sort words into categories or classes**
- 5.47 **analyze and complete analogies (e.g., synonyms, antonyms, part/whole, object/group)**
- 5.48 **use prefixes as structure clues for word recognition and meaning**
- 5.49 **use root words as structure clues for word recognition and meaning**
- 5.50 **use suffixes as structure clues for word recognition and meaning**
- 5.51 **evaluate a list of synonyms and sort according to their connotations**

Writing

- 5.52_{4,7,10} **write complete sentences**
- 5.53_{4,7,10} **use a variety of sentence types (e.g., simple, compound, complete, declarative, and interrogative)**
- 5.54 **develop a paragraph with a main idea/topic sentence supported by details**
- 5.55 **use prewriting and drafting strategies to generate topics and plan approaches to writing tasks**
- 5.56 **use strategies to write for a specific purpose (e.g., narrative, informative, and persuasive)**
- 5.57_{4,7,10} **use editing strategies to correct errors in organization, content, usage, capitalization, punctuation and spelling**
- 5.58_{4,7,10} **compose narrative text that contains a beginning, middle and end**
- 5.59_{4,7,10} **use a writing prompt to develop a composition with a smooth transition**
- 5.60 **develop a composition that is focused, coherent, and has a clear and logical progression of ideas**

- 5.61^{4,7,10} develop a composition that contains specific, relevant details
- 5.62 use writing strategies to address specific types of writing (e.g., journal, friendly letters, and business letters)
- 5.63 demonstrate progress toward mastery of penmanship and keyboarding
- 5.64 use electronic and traditional editing strategies (e.g., symbols, dictionaries) to correct spelling errors (e.g., proper names, homographs, [in, inn].)

Spelling

- 5.65 **identify and spell common homophones/homonyms (words that have different meanings and spellings but are pronounced the same (e.g., here - hear, sun - son))**
- 5.66 spell words correctly containing "long a" and its variants (e.g., ai, ay, a_e, eigh)
- 5.67 **spell words correctly containing "long e" and its variants (e.g., ea, e_e, _e, ee)**
- 5.68 spell words correctly containing "long i", and its variants (e.g., i_e, ie, igh, _y, _ye)
- 5.69 spell words correctly containing "long o" and its variants (e.g., oa, oe, ow, ough, o_e, _o)
- 5.70 spell words correctly containing "long u" and its variants (e.g., u_e, ue, oo, ew)
- 5.71 **spell words correctly containing the "r" controlled vowels (e.g., ir, ur, er, ar, or)**
- 5.72 spell words correctly containing the letter "g" pronounced "j" (e.g., gi, ge, dge)
- 5.73 **spell words correctly containing the letter "c" pronounced "s" (e.g., ci, ce, cy)**
- 5.74 spell words correctly containing the phonetic elements "ch" and "sh" (e.g., churn, shirt)
- 5.75 **spell correctly words ending in "s", "ss", "x", "ch", "sh", with an "s" added (e.g., gases, boxes, churches, pushes)**
- 5.76 spell correctly words beginning with the "n" sound, but have silent consonants (e.g., gnat, knot)
- 5.77 spell correctly words having "f" sound spelled with diphthong ph (e.g., phone)
- 5.78 **spell correctly words ending in a vowel with an inflectional ending or suffix added (e.g., mating, messiness)**
- 5.79 **spell correctly words ending in a consonant with an inflectional ending or suffix added (e.g., hopping, hoping)**
- 5.80 spell correctly words with the prefix "mis" (e.g., misspell)
- 5.81 spell correctly words with the suffix "ion", "sion", "tion"
- 5.82 demonstrate accurate spelling across the curriculum
- 5.83 develop spelling competency by recognizing one's own spelling weakness
- 5.84 differentiate words that are commonly misspelled (e.g., except, accept)
- 5.85 distinguish between spelling of contractions and similar possessives (e.g., its, it's)
- 5.86 use correct and exaggerated pronunciation as a spelling strategy (e.g., identify I-den-ti-fy)
- 5.87 use syllabication as a spelling strategy
- 5.88 use memorization and /or mnemonic devices as a spelling strategy
- 5.89 use meaning as a spelling strategy (e.g., "bi" means "two", "tri" means "three", "sub" means "under", "super" means "over")
- 5.90 use visualization as a spelling strategy (e.g., word configuration)
- 5.91 use visual and auditory cues as a spelling strategy (e.g., dessert, desert)
- 5.92 use visual and auditory cues as a spelling strategy (e.g., -ise, -ice, -ize)
- 5.93 use visual and auditory cues as a spelling strategy (e.g., compound words)
- 5.94 use electronic as well as traditional editing resources to correct spelling errors (e.g., electronic spell checker,

dictionary, thesaurus)

Language

- 5.95 capitalize first word in sentence
- 5.96 capitalize pronoun "I"
- 5.97^{1,2,4,7,8,9,10,11} **capitalize proper nouns, abbreviations, and proper adjectives**
- 5.98 **capitalize titles of persons and initials**
- 5.99 capitalize titles of written works
- 5.100^{2,3,4,6} **capitalize parts of a letter**
- 5.101^{3,4,6,9,10,11} **capitalize first word of direct quotation**
- 5.102 capitalize parts of an outline
- 5.103 use period at end of declarative and imperative sentence, after abbreviation, and in outline form
- 5.104 use question mark at end of interrogative sentence
- 5.105 use exclamation mark at end of exclamatory sentence and after interjections
- 5.106^{2,3,4,6} **use commas between city and state**
- 5.107 use comma to separate day of week from day of month from year
- 5.108^{2,3,4,6} **use comma after greeting and after closing in a friendly letter**
- 5.109^{3,4,6,9} **use comma to separate items in a series**
- 5.110^{3,4,6,7,8,9,10,11} **use comma in a compound sentence (e.g., ..., and ;, but....)**
- 5.111^{7,8,10,11} **use comma to separate a noun from its appositive**
- 5.112 use commas after introductory words phrases and clauses
- 5.113 underline titles of books
- 5.114^{2,3,4,6,9} **use apostrophe with contractions**
- 5.115^{4,6,7,8,9,10,11} **use apostrophe with possessive nouns**
- 5.116^{3,4,6,9,10,11} **use quotation marks in direct quotations**
- 5.117^{4,6} **use quotation marks in titles of written work or work of art**
- 5.118^{6,8,10,11} **use colon to indicate a list follows**
- 5.119 use a hyphen to divide words between syllables at the end of a writing line
- 5.120 use a hyphen in appropriate

compound words

- 5.121^{4,6,8,9,10,11} **evaluate and correct the use of apostrophes, colons, quotation marks, and commas when editing a writing sample**
- 5.122^{1,2,4,7,9,10,11} **identify proper and common nouns**
- 5.123 use correct forms for regular and irregular plurals of nouns
- 5.124 use correct possessive forms of nouns
- 5.125 identify concrete nouns (e.g., people, places)
- 5.126 identify abstract nouns (e.g., feelings)
- 5.127 identify verbs
- 5.128^{1,2,3,4,6,7,8,9,10,11} **use correct verb tense in oral and written work**
- 5.129 recognize action, helping, and linking verbs
- 5.130^{1,2,3,4,6,7,8,9,10,11} **use subject-verb agreement in oral and written work**
- 5.131 use correct forms of irregular verbs
- 5.132 identify adjectives
- 5.133^{3,4,6,7} **use "-er" at end of comparative adjectives**
- 5.134^{3,4,6,7} **use "-est" at end of superlative adjectives**
- 5.135 identify adverbs
- 5.136 use "-er" at end of comparative adverbs
- 5.137 use "-est" at end of superlative adverbs
- 5.138 identify adjectives that use "more" and "most" instead of "-er" and "est" for comparative and superlative forms
- 5.139 identify adverbs that use "more" and "most" instead of "-er" and "est" for comparative and superlative forms
- 5.140^{1,2,3,4,6,7,8,9,10,11} **identify and correct double negatives in oral and written work**
- 5.141^{4,6,7,8,9,10,11} **use the correct pronoun case (e.g., nominative, objective, possessive)**
- 5.142 use pronoun/antecedent agreement
- 5.143 use correct demonstrative pronoun (e.g., this, that, these, those)

- 5.144 use correct compound personal pronouns (himself instead of hisself, themselves instead of theirself)
- 5.145 identify subject of a sentence
- 5.146 identify predicate of a sentence
- 5.147_{3,4,6,8} combine two sentences by combining subjects, predicates, modifiers, phrases, and/or clauses
- 5.148_{1,2,3,4,6,7,8,9,10,11} identify and correct run-on sentences
- 5.149_{1,2,3,4,6,7,8,9,10,11} identify and correct sentence fragments
- 5.150_{1,2,3,4,6,7,8,9,10,11} identify and correct redundant words/sentences
- 5.151_{6,7,8,9,10,11} recognize an appropriate ending to a story (e.g., purpose, content, organization, and tone)
- 5.152_{3,4,6,7,9,10,11} recognize a topic sentence in a paragraph
- 5.153_{2,3,6} recognize a summary or supporting sentence in a paragraph
- 5.154_{2,3,4,6,7,8,9,10,11} identify audience for which a selection was written
- 5.155_{6,7,8,9,10,11} edit to produce concise, effective writing (e.g., exact/precise words, vivid words, trite/overused words, clichés)
- 5.156_{1,2,4,6,7,8,10,11} edit to remove unnecessary sentences

Study Skills

- 5.157_{8,9,10} identify and evaluate the general usefulness of a book's content after reading the table of contents, title page, copyright page, and index
- 5.158_{8,9} know the purpose of the table of contents of a book
- 5.159_{8,9,10} locate information in identified chapters using the table of contents
- 5.160_{8,9,10} locate specific information using the table of contents and index
- 5.161 infer the content of a chapter after reading the table of contents
- 5.162_{6,7} identify sources for certain types of information (e.g., newspaper, dictionary,

encyclopedia

- 5.163_{6,7,8,9,10} identify parts of a text and the information contained therein (e.g., glossary, telephone, directory, and index)
- 5.164_{3,4,6,7,9,11} demonstrate the appropriate use of the general reference sources of a dictionary, thesaurus, atlas, almanac, and encyclopedia
- 5.165_{6,7} identify a word that will come first in alphabetical order according to its second and, then, third letter
- 5.166_{3,6,7,9,10,11} use guide words from a dictionary page to select the word that would be on the page
- 5.167_{3,6,7,8,9,10,11} read the various meanings of a dictionary entry to determine the meaning of a word in a sentence
- 5.168_{3,6,7,8} use the dictionary pronunciation guide to determine sounds, syllables, and accent(s) of a word
- 5.169_{6,7,8,9,10,11} determine which number in a dictionary definition best fits the meaning of a word in a sentence
- 5.170 know the purpose of the card catalog, both electronic and traditional
- 5.171_{6,7,8} locate a call number from electronic or traditional catalog
- 5.172 use active reading skills to gain information (e.g., survey, note-taking, adjust reading rate, underlining, outlining or webbing, and summarizing)
- 5.173_{9,10,11} organize title, topics, and details into a semantic web
- 5.174_{6,7,8} recognize topic, main headings, and sub-headings in a graphic organizer
- 5.175_{6,7,8} know author's sources of information are in a bibliography or reference section
- 5.176 identify and interpret graphic aids (e.g., maps, charts, graphs, tables, and timelines)
- 5.177 identify and use note-taking and test-taking skills
- 5.178 adjust reading rate according to

purpose and nature of material

Computer/Technology

5.179 use appropriate software to practice and master fifth grade English language arts instructional objectives 5.180 using a word processor, demonstrate correct keying, editing, and formatting techniques 5.181 use a word processing program to copy and move text (5.57) 5.182 use a word processing program to produce a report that contains centering, tabs, and more than one paragraph (5.57) 5.183 use the editing functions of a word processor (spell check, grammar checker, thesaurus, outline) (5.57, 5.64 and 5.94) 5.184 identify examples of written,	5.185 spoken, and viewed work that is protected by copyright laws describe the influence of technology on communication (reading, writing, spelling, handwriting/keyboarding, speaking, listening, and viewing) 5.186 select and use appropriate software and/or other technologies to locate and use reference sources (5.27 and 5.162) 5.187 develop keyboarding skills: proper posture, finger placement, keying letters, numbers, symbols, and special keys (5.63) 5.188 use graphic software to create, read, interpret and organize information in the form of tables, graphs, diagrams and charts (5.176)

Grade Five Mathematics

Building on mastery of the basic facts of addition, subtraction, multiplication, and division, the fifth grade objectives place emphasis on developing proficiency in using whole numbers, fractions, and decimals to solve problems. Students will collect, display, and analyze data in a variety of ways and solve probability problems. Students will solve problems involving area and perimeter, will classify polygons, plot points on a coordinate plane, and write a number sentence using a variable to solve problems. Students should be actively engaged, continuing to use concrete materials and appropriate technologies such as calculators and computers. Problem solving should be integrated throughout all the strands. The development of a variety of problem-solving strategies should be a major goal of mathematics at this grade level.

Number Theory and Number Sense

5.1_{4,6,7,8} read, write, and identify place value of whole numbers and decimals from millions through thousandths using standard and expanded form 5.2_{4,6} compare and order the value of whole numbers and decimals from millions through thousandths using symbols <, >, or = 5.3_{6,7,8} identify alternative representations (pictures, models, number lines, etc.) of fractions, mixed numbers, and decimals	5.4_{6,7,8} compare and order fractions, including lowest term fractions, improper fractions, and mixed numbers with like and unlike denominators 5.5_{6,7,8} write or model equivalences of fractions, decimals, percent, and ratios 5.6₆ find the Greatest Common Factors of two numbers by listing factors 5.7₆ find the Least Common Multiple of two numbers by listing multiples 5.8₆ represent or model decimals on a grid or use concrete materials 5.9 identify a number that is one

hundred more or one hundred less than a given number

Computation and Estimation

5.10_{3,4,6,7,8} use estimation to solve problems with whole numbers and decimals including money (compatible numbers, rounding, and front-end estimation); use to determine reasonableness

5.11_{6,7,8} solve problems in context involving addition and subtraction of whole numbers through six digits; multiplication of whole numbers through four digits by three digits; division of whole numbers with dividends of up to five digits and divisors of up to two digits using estimations, mental math, calculators, and paper and pencil

5.12_{6,7,8} solve problems in context involving addition, subtraction, and multiplication of decimals through the thousandths and division of decimal dividends through the thousandths by a single digit whole number divisor using estimation, mental math, calculators, and paper and pencil

5.13_{6,7,8} solve problems in context involving addition and subtraction of fractions and mixed numbers with like and unlike denominators involving regrouping, expressing answers in simplest form

5.14 use computation, estimation, calculators, and computers to solve application problems

5.15_{6,7,8} round to the nearest dollar, hour, and to the million and millionth places

5.16_{6,7,8} solve problems with multiple operations in context and with operations involving basic percents in context

Patterns, Functions, and Algebra

5.17_{k,1,2,3,4,6} explore a variety of patterns

with missing elements, including numeric and geometric patterns, such as triangular numbers, perfect squares, patterns formed by powers of ten, and arithmetic sequences using paper and pencil, concrete materials, calculators, and/or computers

5.18_{6,7,8} use input/output models for functions (number machines)

5.19 write a number sentence using a variable to solve problems

5.20 solve problems by using a choice of strategies including guess and check, make a table, make a model, make a list, draw a picture, find a pattern, work backwards, use a formula, and/or make a diagram

5.21_{3,4,6,7} rewrite addition and multiplication number sentences and expressions using the operations of addition and multiplication and their inverse and commutative properties [e.g., $4 \times 3 = \square - \square \div 3 = 4$ (fact families) and $5 \times 8 \times 3 = 3 \times 8 \times 5$]

5.22 introduce the order of operations: parenthesis, multiplication and division, then addition and subtraction

Probability and Statistics

5.23_{6,7,8} collect, organize, display, read, and interpret numerical data in a variety of forms: tables, tally charts, bar graphs, line graphs, circle graphs, and stem-and-leaf plots

5.24_{6,7} find the mean, median, range, and mode of a given set of data

5.25_{4,6,7,8} identify probabilities and solve problems involving the probability of an event by using tree diagrams or by construction of a sample space representing all possible results

5.26 construct, read, or interpret tables, charts, and graphs to draw reasonable inferences or verify predictions using available technology

- 5.27 model situations by carrying out experiments to determine probability
- 5.28_{6,7,8} **determine combinations and permutations (tree diagrams and probability experiments with and without replacements)**

Geometry

- 5.29_{4,6,7} **compare, classify, measure, and draw right, acute, and obtuse angles and triangles using a straightedge and protractor**
- 5.30 recognize and construct isosceles, right, and equilateral triangles
- 5.31 **classify and compare the following polygons: square, rectangle, parallelogram, pentagon, hexagon, and octagon**
- 5.32_{3,4,6,7} **identify the ordered pair for a point and locate the point in the first quadrant of a coordinate plane**
- 5.33 identify figures as similar and/or congruent, including scale drawings
- 5.34 recognize lines of symmetry in the environment
- 5.35 recognize the images of figures after flips, slides, and turns (reflections, translations, and rotations)

Measurement

- 5.36_{6,7,8} **estimate and/or measure the length of real objects in parts of an inch up to 1/8 inch, whole inches, feet, yards, miles, millimeters, centimeters, meters, and kilometers**
- 5.37 estimate and/or measure the weight/mass of real objects in ounces, pounds, tons, grams, and kilograms
- 5.38 estimate and/or measure liquid volume in cups, pints, quarts, gallons, milliliters, and liters
- 5.39 estimate and measure temperature in Celsius and Fahrenheit units of the boiling point of water, freezing point of

water, room temperature, and body temperature

- 5.40_{4,6,7,8} **describe, determine, and compare the perimeters of polygons and the area in square units of squares, rectangles, and triangles, given the appropriate measures**
- 5.41 apply the concepts of perimeter, area, volume, weight/mass, time, and temperature in practical problem-solving situations
- 5.42_{2,3,4,6,7,8} **determine an amount of elapsed time in hours and minutes within a twenty-four hour period**
- 5.43 apply the concepts of perimeter, area, volume, weight/mass, time, and temperature in practical problem-solving situations
- 5.44_{6,7,8} **compute and convert customary and metric units of measure within the same system in problem-solving situations**
- 5.45₆ **select appropriate customary and metric units and tools for measuring to desired degree of precision**
- 5.46_{6,7,8} **determine actual measurements from scale drawings**

Computer and Technology

- 5.47 use appropriate software to practice and master fifth grade instructional objectives in mathematics
- 5.48 use a calculator to solve problems with large whole numbers and small decimal numbers
- 5.49 use a calculator to solve problems with large whole numbers and small decimal numbers
- 5.50 use a calculator to solve application problems.
- 5.51 use a calculator to produce a variety of number patterns
- 5.52 use a calculator to find mean, median, range, and mode of a given set of data
- 5.53 use a calculator to convert

- customary and metric units of measure in problem-solving situations
- 5.54 use graphing software to organize and display data by creating tables, charts, bar, line, and circle graphs
- 5.55 practice inputting data using
- correct keying, editing, and formatting techniques
- 5.56 identify examples of mathematical work that is protected by copyright laws
- 5.57 describe the influence of technology on mathematics

Grade Five: United States History

The fifth grade program of study consists of a basic overview of the history of the United States from the age of exploration to the present.

Civics

- 5.1 explain how the implementation of the Articles of Confederation led to the development of the United States Constitution
- 5.2₁₁ identify and analyze the reasons for compromises used in the development of the United States Constitution.
- 5.3 identify the three parts of the Constitution and explain the importance of each section
- 5.4_{3,6,7,8,9,10,11} list and explain the functions of the executive, legislative, and judicial branches of government
- 5.5 define the national census and explain the effects that it has on the legislative branch
- 5.6 explain the reasons for the adoption of the Bill of Rights to the Constitution and the rights that it protects
- 5.7_{6,7,8,9} identify differences between individual rights and responsibilities of American citizenship
- 5.8₃ using a mock legislature, demonstrate the roles of elected representatives
- 5.9_{3,6,8,9,10} construct a chart which lists the roles of government at the local, state, and national levels
- 5.10 compare similar

responsibilities in public and private sector jobs

- 5.11₇ participate in role playing exercises which demonstrates knowledge of "trial by jury"

Economics

- 5.12_{4,6,8} list geographic factors that can enhance or limit economic activities in various United States regions
- 5.13_{4,6,7,10} utilizing economic vocabulary, apply the concept of supply and demand to a specific United States situation
- 5.14 explain the economic impact of slavery upon the development of the United States
- 5.15₆ examine graphs, charts, and timelines to draw conclusions about agricultural development
- 5.16₁₀ explain the economic importance of the New Deal in relation to the Great Depression
- 5.17_{6,8} describe the characteristics of an industrial center and its impact on the United States economy
- 5.18_{3,4,7,9} construct a chart showing the distribution of tax dollars in the United States economy
- 5.19_{7,9,10} identify the roles of consumers in the United States economy
- 5.20_{4,6} apply the concepts of sales,

expenses, and profits to a real life event (e.g., school-related situation such as sports events, concession stand, snack machines)

Geography

- 5.21 use maps and globes to trace the location and movements of various cultures drawn to the New World
- 5.22^{4,6,11} measure distances using a scale and apply the concept of cardinal and intermediate directions to maps
- 5.23^{6,11} use a map to indicate the location of a country by hemisphere and its proximity to the equator
- 5.24^{7,8} explain the geographic perceptions explorers had of the New World with regard to landforms, wealth, and people
- 5.25⁷ trace the development of America's urban areas
- 5.26⁶ use geography to describe historical events (e.g., the emergence of different Native American groups, the rise of slavery in the South, the need for Asian labor in the West, exploration)
- 5.27⁹ explain the relationship of United State's cultures to its environments
- 5.28 identify and locate each of the fifty United States within their regions
- 5.29 locate, identify, and contrast the major rivers, landforms, natural resources, climate regions, major soil regions, and deserts of the United States
- 5.30 relate America's westward expansion to natural resources and physical geography
- 5.31 describe how people have changed the environment of the United States
- 5.32^{3,4,6,7,8,9,10,11} read, interpret, and draw conclusions from United States maps (e.g., special purpose maps, graphs, charts, tables, and timelines)

History

- 5.33 compare and contrast Native American cultures and the cultures of European settlers
- 5.34^{6,7,8,9,11} explain problems faced by immigrants relocating to the New World
- 5.35⁹ identify areas and patterns of early American settlement
- 5.36 examine the lifestyles and customs of the colonial settlers
- 5.37^{6,10} analyze the causes and effects of the American Revolutionary War, and identify leaders in the movement
- 5.38^{3,6} interpret quotes of famous Americans from various periods of history
- 5.39^{6,10} identify and classify the issues contained in the Declaration of Independence
- 5.40⁸ describe problems faced by Washington when he became the first United States President
- 5.41 list and explain the causes and effects of the Louisiana Purchase
- 5.42^{6,8,10,11} compare and contrast reasons for exploration and land acquisition by the French, Spanish, and English in America and the effect it had on Native Americans
- 5.43^{7,8,9} analyze how immigration policy changes have affected United States immigration patterns
- 5.44^{4,6,8} identify causes, major events, and important people of the Civil War
- 5.45^{6,8} analyze the impact of slavery and the Abolitionist Movement upon the development of the United States
- 5.46^{6,8} explain how expansion affected the inhabitants of the American West (e.g., Native Americans, settlers) and explain the roles of Homesteaders
- 5.47^{6,9} explain the importance of various historical documents in the development of the United States
- 5.48 identify and explain social and

- technological changes that took place during the Industrial Revolution in the United States
- 5.49 trace the development of transportation in the United States and describe its impact on settlement, industry, and residential patterns
- 5.50 identify events which led to the United States becoming a world power
- 5.51 identify the two opposing sides in World War I, and explain why the United States entered the war
- 5.52 describe the effects of the Great Depression on the people of the United States
- 5.53 identify the causes and effects of World War I and World War II
- 5.54 identify contributors to the Civil Rights Movement (e.g., John Fitzgerald Kennedy, Martin Luther King Jr., Rosa Parks, Lyndon Johnson)
- 5.55 identify United States conflicts resulting from police action as opposed to a declaration of war (e.g., World War I, World War II, Korea, Vietnam)
- 5.56 identify contributing factors leading to United States peace keeping missions initiated by the United Nations

Computer/Technology

- 5.57 use appropriate software to practice and master fifth grade social studies instructional objectives
- 5.58 use a variety of audio-visual and multi-media materials to practice and master fifth grade social studies instructional objectives
- 5.59 practice inputting data using correct keying, editing, and formatting techniques
- 5.60 using graphics software, select the appropriate type of graph to display a set of data
- 5.61 use graphics software to create charts, graphs, and tables
- 5.62 identify database management terms (e.g., database, file, record, field/category, sort/arrange, select/search, report)
- 5.63 use a database template to enter and edit data
- 5.64 identify intellectual property protected by technological copyright
- 5.65 describe the influence of technology on life in the United States

Grade Five Science

The Coordinated and Thematic Science (CATS) Five objectives identify, compare, classify and explain our living and designed worlds. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy in the fields of biology, chemistry, physics, and earth/space sciences. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of the major science themes of systems, changes and models. Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated in all activities. CATS Five reviews earth and the sky, life cycles and habitats of organisms, properties, positions, and motions of objects, and energy. New major concepts introduced at the fifth grade level include changes in properties of matter, structures, functions and adaptations of organisms, and the structure of the earth's system.

Nature of Science

- 5.1 develop a conceptual framework of scientific principles
- 5.2 recognize the interdependency of science themes and scientific concepts
- 5.3 evaluate the interrelationships of scientific concepts to everyday life by making informed decisions and choices using scientific reasoning and knowledge ◇
- 5.4_{6,7} investigate career choices in science and technology ◇
- 5.5_{6,7,8} apply skepticism, careful methods, logical reasoning, and/or creativity in investigating the observable universe (e.g., changing of mechanical energy to electrical energy, electrical energy to mechanical energy, electrical energy to light)
- 5.6 recognize and appreciate that scientific knowledge is subject to modification as new information challenges current theories
- 5.7 acquire a holistic view of scientific knowledge by integrating reading, writing, mathematics and other disciplines with the science curriculum
- 5.8 use a variety of activities and investigations to produce a sense of wonder about the natural world and the joy of discovery
- 5.9 recognize that the exploration of science is challenging and fulfilling and establishes patterns of lifelong curiosity and learning

Scientific Attitudes/Habits of Mind

- 5.10 cooperate and collaborate to ask questions, find answers, solve problems and conduct investigations to further an appreciation and joy of scientific discovery ◇
- 5.11 process and integrate experiences with prior knowledge to formulate new ideas
- 5.12 understand that the study of science is a dynamic process and the results are not always definite

or complete

- 5.13_{6,7,8,9,10,11} formulate conclusions through close observations, logic, objectivity, perseverance and integrity in data collection (e.g., adaptations in structures, photosynthesis, respiration) ◇

Scientific Processes/Thinking Skills

- 5.14 recognize and apply facts, concepts, laws, and theories to explain phenomena
- 5.15_{3,4,6,7,8,9,10} compare and contrast objects, actions or phenomena according to similarities and differences in order to classify them (e.g., atoms and molecules, AC and DC currents, earthquakes and volcanoes)
- 5.16_{3,4,6,7,8,9,10,11} construct and use charts, graphs, and tables to organize, display, interpret, analyze, and explain data (e.g., extrapolation, interpolation) ◇
- 5.17_{3,4,6,7,8,9,10} use inferential reasoning to make logical conclusions from collected data (e.g., causes and effects) ◇
- 5.18_{3,4,6,7,8,9,10,11} utilize experimentation to demonstrate scientific processes (e.g., formulating questions, predicting, forming hypotheses, quantifying, identifying dependent and independent variables)
- 5.19_{3,4,6,7,8,9,10,11} develop rational thinking processes that underlie scientific approaches to problem solving by employing critical-thinking skills in applying scientific knowledge, using imagination and creativity while working individually or cooperatively (e.g., patterns of motion, cycles of matter and energy) ◇
- 5.20_{3,4,6,7,8,9,10,11} develop skills in the use of laboratory materials and equipment; and proper communication of scientific

data collected (e.g., meter sticks, balances, thermometers, scales, graduated cylinders) ◇

Laboratory Investigations/Hands-On Learning

- 5.21 engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and laboratory skills
- 5.22 use a variety of materials and scientific instruments to conduct explorations and investigations of the natural world to explain science concepts (e.g., measure environmental conditions using appropriate instruments) ◇
- 5.23 demonstrate safe techniques for handling, manipulating and caring for science materials, equipment and living organisms ◇

Science Themes and Subject Matter

- 5.24 develop through the study of interdependent themes including systems, changes, and models an understanding of biological, earth/space, and physical science concepts
- 5.25 associate hands-on activities to daily life experiences
- 5.26 express ideas that illustrate the relevance of science, technology, and societal issues
- 5.27^{3,4,6,8,9,10,11} classify living and non-living things according to properties (e.g., structures and functions, mass, volume, density, solubility, conductivity, magnetism, weight, shape, color, freezing point, boiling point, evaporation, rocks and minerals) - *systems*
- 5.28 identify and explain common energy transformations and cycles of matter (e.g., photosynthesis, water, carbon

dioxide, nitrogen, energy conversions including fuels) - *systems*

- 5.29 demonstrate the processes involved in the changes of physical states of matter (e.g., solid to liquid to gas to liquid to solid) - *systems*
- 5.30^{3,4,6,7,8,9,10,11} recognize and explore methods for investigating physical changes (e.g., evaporating, condensing, boiling, freezing, melting, salinity, density, shape and size) - *changes*
- 5.31₆ explain the affects of force on motion (e.g., wind currents, hot air on balloons) - *changes*
- 5.32^{2,3,4,7,8,9,10} explain how the different characteristics of plants and animals help them to survive in different niches and environments (e.g., adaptations, natural selection, extinction) - *systems*
- 5.33_{4,7,8} identify the structures of living things and explain their functions (e.g., cells, tissues, organs, organ systems, whole organisms, communities, ecosystems) - *systems*
- 5.34^{4,6,8,10} compare variations of plant growth and reproduction (e.g., seed dispersal, asexual and sexual reproduction, needs of growing plants) - *systems*
- 5.35 describe methods that various cells use to obtain and process food - *changes*
- 5.36^{3,4,6,7,8,9,10} trace the pathways of the sun's energy through producers, consumers, and decomposers (e.g., food webs, pyramids) - *models*
- 5.37 explain that the mass of a material is conserved whether it is together, in parts, or in a different state - *systems*
- 5.38 recognize that elements are composed of atoms of the same type - *models*
- 5.39 using the periodic table, identify common elements according to their symbols - *models*

- 5.40 describe variables affecting the motion of objects (e.g., gravity, friction, density of medium, amount of energy) - *systems*
- 5.41 use SI (metric) units of measurement as they apply to electricity (e.g., amps, volts, watts) - *systems*
- 5.42_{6,7,8,9,10} construct and interpret graphs depicting motion (e.g., speed vs time) - *models*
- 5.43_{4,10} analyze diagrams of circuits (e.g., complete and incomplete circuits, parts and functions) - *models*
- 5.44₈ demonstrate magnetic forces using magnets (e.g., law of magnets, lines of force) - *models*
- 5.45 describe sound as a wave (e.g., compressional wave) - *models*
- 5.46 review fundamental earth science concepts including, relative age of the earth, movement of celestial objects, air has mass and exerts pressure - *systems*
- 5.47_{4,6} understand there are stars in the universe just like our sun as well as many that are bigger or smaller - *systems*
- 5.48₁₀ explore how fossils can be used to determine the age of rock layers - *systems*
- 5.49₆ interpret the influence of land forms on weather and climate - *systems*
- 5.50 identify and describe natural land forms, changes in these land forms and recognize that they may be used as a record of time - *changes*
- 5.51 compare and explain the different rates of weathering in certain materials (e.g., sand pile, mud pile, rock pile) - *changes*
- 5.52_{3,8} explain how the earth's tilt and revolution determine the seasons - *changes*
- 5.53 compare how seasonal weather patterns are affected by the sun (e.g., amount of sunlight, tilt of the earth, revolution) - *changes*

- 5.54_{3,6,9} collect and display weather data to describe weather patterns (e.g., temperatures, wind direction, wind speed, precipitation) - *models*

- 5.55_{3,4,6,7,8,9,10,11} fabricate and illustrate models (e.g., solar system, structure of earth, erosion and weathering, forces which drive the rock cycle) - *models*

Science History

- 5.56_{6,7} articulate the historical significance of scientific discoveries (e.g., as influenced by technological demands, competition, controversy, world events, personalities, societal issues)
- 5.57_{6,7} compare the evolution of science concepts and theories (e.g., cells, plate tectonics, atoms, genetics)
- 5.58_{6,7} examine the contributions of men and women of diverse cultures to the development of science

Science, Technology, and Society

- 5.59_{6,7,8,10,11} give examples of how science and technology are used in daily living ◇
- 5.60_{6,7,8,10,11} use the knowledge of science and technology to make personal decisions at local and global levels ◇
- 5.61 evaluate and critically analyze mass media reports of scientific developments and events ◇
- 5.62_{6,7,8,10,11} critically analyze the effects and impacts of science and technology on global and local problems (e.g., mining, manufacturing, recycling, farming, water quality)
- 5.63_{6,7,8,10} explore the connections between science, technology, society, and career opportunities
- 5.64_{6,7,8,10,11} analyze the positive and negative effects of technology on society and the influence of societal pressures on the

**direction of technological
advances**

Computer/Technology

- 5.65 use appropriate software and a variety of audio-visual and/or multimedia materials to practice and master fifth grade instructional objectives in science
- 5.66 input data using correct keying, editing, and formatting techniques
- 5.67 using the graphing application of appropriate software, select the suitable graph, chart, or table to display a set of data
- 5.68 using the graphing application of appropriate software, create tables, charts, and/or graphs
- 5.69 use a calculator to perform mathematical functions in data analysis
- 5.70 use a variety of instruments (i.e. probes, thermometers, measuring devices) to perform measurements and record data
- 5.71 identify database management terms (e.g., database, file, record, field, record, field/category, sort/arrange, select/search, report)
- 5.72 use a database template to enter and edit data
- 5.73 use appropriate software to practice reading, interpreting, analyzing, and evaluating the data on a map, chart, graph, table, and diagram
- 5.74 use appropriate software to practice drawing conclusions from maps, diagrams, charts, graphs, and tables
- 5.75 use appropriate software to practice making predictions, inferences, and hypothesis from maps, diagrams, charts, graphs, and tables
- 5.76 associate computer/technology activities with related careers
- 5.77 identify work created by using technology as intellectual property and thus protected by copyright
- 5.78 describe the influence of technology on life in your community
- 5.79 retrieve current data from a variety of electronic sources which might include the Internet, and/or software reference programs

Grade Six

English Language Arts

English Language Arts at the sixth grade level promotes continued proficiency in communication skills of students. At this level, listening and speaking strategies require students to gather and process oral information and to effectively express themselves orally in a variety of situations. Reading objectives strive to promote the development of various vocabulary and comprehension skills that advance the acquisition of literal and inferential knowledge of students and foster recreational reading from a variety of genres, authors, media and resources. Emphasis is given to develop effective writing skills, including prewriting, drafting, revising, editing, and publishing compositions that are error-free and demonstrate proficiency in mechanics and usage to communicate ideas through conventional and electronic methods. This includes applying strategies to spell correctly across the curriculum. Objectives for study skills help students collect and organize information to make it useful in all situations.

Listening/Speaking

- 6.1 identify and correct usage in oral communications
- 6.2 exhibit appropriate speaking etiquette (e.g., speaking in turn, using proper communication technologies, demonstrating interpersonal communication)
- 6.3 use public speaking strategies to prepare formal and informal speaking presentations across the curriculum using appropriate pitch, tone, and rate
- 6.4 listen to oral communications using proper etiquette
- 6.5 listen to oral communications and retell in either oral or written form
- 6.6_{2,3,5,7,8} **listen to oral directions and successfully complete the task**
- 6.7 listen to oral communications and critique, evaluate, and summarize their contents across the curriculum
- 6.8_{2,4,5,7,8} **listen to specific oral information and interpret it to construct meaning in and beyond the text**
- 6.9_{5,7,8} listen to oral communications and identify the synonym of an unknown word from context
- 6.10 listen to oral communication to determine the main idea
- 6.11 listen to oral communication to list details
- 6.12_{2,3,4,5,7,8} **listen to oral communication and**

distinguish between fact and opinion

- 6.13 listen to oral communication to predict outcomes
- 6.14_{1,2,5,7,8} **think critically about oral selection to foster exploration, questioning and imagining**
- 6.15_{5,7,8} relate personal experiences to the information heard to construct new meaning

Reading Comprehension

- 6.16_{1,2,3,4,5,7,8,9,10,11} **read literary works by national and international authors to include but not to be limited to: short stories, biographies, contemporary fiction, nonfiction (science and social sciences), narratives, novels, folk-lore, poetry, and drama**
- 6.17_{1,2,3,4,5,7,8,9,10,11} **analyze the organization, author's style, and text components to determine genre**
- 6.18 determine and use the appropriate reading style for a particular reading situation (e.g., skim, scan, reading for information, recreational reading)
- 6.19 read directions to perform a task and apply the directions to a specific situation
- 6.20_{7,8,9} **locate key words and other explicit information to construct initial meaning of a**

text

- 6.21_{k,2,4,8,9,10,11} extend the meaning from a passage to determine the main idea (e.g., theme)
- 6.22_{3,4,5,7,8,9,10,11} locate specific details in a textbook passage to promote understanding (e.g., cause-effect, classifying, compare and contrast, sequence, etc.)
- 6.23_{k,3,4,5,7,8,9,10,11} locate specific details in functional materials (e.g., advertisements) and recreational materials to promote initial understanding
- 6.24_{4,7,8,10} determine factual information from opinion or fiction
- 6.25 determine the meaning of a word by using context clues
- 6.26_{k,3,4,7,8,9,11} draw conclusions to describe character traits, thoughts, feelings, and motives
- 6.27_{k,3,4,5,7,8,9,10,11} draw conclusions to make generalizations, judgements, inferences, and to summarize and analyze information based on reading selection
- 6.28_{k,3,4,5,7,8,9,10,11} draw conclusions from functional material (e.g., advertisements) to make analysis of information
- 6.29_{8,9,10,11} justify conclusions based on textbook information
- 6.30_{k,2,3,4,5,7,9,10,11} make logical predictions based on events in a passage
- 6.31_{9,10} use setting, plot, characterization, author's style, and theme to determine understanding and extend the story
- 6.32_{5,9,10,11} use figurative language (e.g., simile, metaphor, hyperbole, pun, idioms alliteration, personification, and onomatopoeia,) and jargon to determine meaning of information in functional text (e.g., advertisement)
- 6.33_{3,5,10} identify other sources of information for a textbook topic (e.g., encyclopedia, dictionary, thesaurus, and

library resources)

- 6.34_{k,5,10} identify and apply appropriate strategies to aid in comprehension (e.g., graphic organizers, outlining, etc.)

Reading Vocabulary

- 6.35 recognize and use key words introduced in the text
- 6.36 recognize and supply rhyming words
- 6.37 identify and generate compound words
- 6.38 recognize and select synonym for a word
- 6.39_{2,3,4,5,7,8,9,10,11} determine the synonym for words in text to clarify meaning
- 6.40 recognize and select antonyms
- 6.41 recognize words as homophones and be able to chose appropriate homophone according to the usage
- 6.42 recognize words as homographs and correctly pronounce according to its usage
- 6.43_{2,3,4,5,7,8,9,10,11} determine the meaning of multiple meaning words according to context
- 6.44_{k,2,3,4,5,7,8,9,10,11} determine the meaning of words from their use in context
- 6.45 use prefixes as structural clues for word recognition and meaning
- 6.46 use base words as structural clues for word recognition and meaning
- 6.47 use suffixes as structural clues for word recognition and meaning
- 6.48 recognize and use Greek or Latin roots as structural clues for help in determining word meanings
- 6.49 recognize and understand clipped or shortened words (e.g., exam-examination)
- 6.50 recognize and select appropriate word to complete analogies
- 6.51 use connotation/denotation to understand meaning

Writing

- 6.52 write sentences that are complete, varied, and economical
- 6.53 use prewriting and drafting

- strategies (e.g., drawing, clustering, brainstorming, discussion, etc.) to generate topics and plan approaches to writing tasks
- 6.54 use writing strategies to address specific writing purposes, such as research, creative, journalistic, essay, narrative, informative and persuasive
- 6.55_{4,7,10} use a writing prompt to develop a composition that has smooth transition
- 6.56_{4,7,10} use a writing prompt to develop a composition that addresses the assigned topic
- 6.57_{4,7,10} use a writing prompt to develop a composition containing specific, relevant details
- 6.58_{4,7,10} write sentences where diction is expressed in complete, varied, and economical ways
- 6.59 use revision strategies (e.g., adding dialogue, varying sentence length and structure, adding details, etc.)
- 6.60 edit own writing as well as the writing of others (e.g., peer editing) to delete or correct errors in organization, content, usage, mechanics, and spelling
- 6.61_{4,7,10} write with ever increasing command of the conventions of composition
- 6.62_{4,7,10} use a writing prompt to develop a composition that has a beginning, middle, and end
- 6.63_{4,7,10} use a writing prompt to develop a composition that is focused, coherent, and has a clear and logical progression of ideas
- 6.64 use writing strategies to write for audiences, including peers, teachers, and employers
- 6.65 demonstrate continuous progress toward mastery of penmanship and keyboarding in the writing process
- 6.66 use electronic and traditional editing strategies to correct spelling errors (e.g., symbols, dictionaries) (e.g., proper names, homophones, [in, inn].)

Spelling

- 6.67 demonstrate accurate spelling and pronunciation in their written and oral communication across the curriculum
- 6.68 develop spelling competency by recognizing one's own spelling weakness
- 6.69 focus on problem parts of words that are commonly misspelled (e.g., busy, minute, etc)
- 6.70 use memorization or mnemonic devices as a strategy for spelling words (e.g., colonel)
- 6.71 spell correctly words containing short vowel sounds (e.g., snack, spend)
- 6.72 **spell correctly words containing long vowel sounds (e.g., "a" cane, paint, pay)**
- 6.73 **spell correctly words containing the schwa sound (e.g., elephant, telephone)**
- 6.74 **spell correctly words containing a vowel variant (e.g., ou, ie, ey)**
- 6.75 **spell correctly words with multi-spellings for the same sound (e.g., "c" sounded as "k", "c" sounded as "s")**
- 6.76 **form and spell correctly the plurals of words ending in "o" and "y" (e.g., domino, potato, baby)**
- 6.77 spell correctly words that form plurals requiring the addition of "s" and "es" (e.g., girls - dresses)
- 6.78 spell correctly words containing "y" sounded as "i" (e.g., my, fly)
- 6.79 spell correctly words containing silent letters or have doubling of final consonant (e.g., doll, class, comb, gnaw, etc)
- 6.80 spell correctly words containing "oi" and "oy" and "ei" and "ie" (e.g., boil, toy, receive, believe)
- 6.81 identify, use, and spell common homophones/homonyms (words that have different meanings and spellings but are pronounced the same (e.g., hear - here, sun - son))
- 6.82 identify and form words with inflectional endings including when the word ending changes to

- add "ed" or "ing"
- 6.83 identify and form comparative and superlative adjectives (e.g., hard, harder, hardest)
- 6.84 identify and form words with prefixes (e.g., in, im, pre, tri, re, un, dis, etc)
- 6.85 identify and form words with the common suffix, "tion", "ly", "ious", "ture", "ible", and "able" (e.g., subtraction, lovely, mixture, precious, enjoyable, and flexible)
- 6.86 acquire a spelling vocabulary from a wide variety of instructional sources
- 6.87 use electronic editing as well as traditional editing resources to correct spelling errors (e.g., electronic spell checker, dictionary, thesaurus)

Language

- 6.88 use capital letters at beginning of sentences
- 6.89 capitalize the pronoun "I"
- 6.90^{1,2,3,4,5,7,8,9,10,11} use capital letters for proper nouns (e.g., names, family relationships, days of the week, cities, states, countries, holidays, months, geographic features, nationalities, languages, and historic events)
- 6.91^{1,2,3,4,5} use capital letters for titles of works (e.g., books, stories, T.V. shows, and works of art)
- 6.92^{1,2,3,4,5,7,8,9,10,11} use capital letters for titles of people (e.g., President Lincoln)
- 6.93^{2,3,4,5} capitalize appropriate part of a letter (e.g., heading, greeting, closing, etc)
- 6.94 use capital letters when writing initials and abbreviated titles
- 6.95^{3,4,5,10,11} use a capital letter for the first word of a direct quotation
- 6.96 use capital letters for parts of an outline
- 6.97^{7,8,10,11} use a capital letter for proper adjectives
- 6.98 use periods at the end of a declarative or imperative sentence, after abbreviations, and in outlines
- 6.99 use a question mark at the end of an interrogative sentence
- 6.100 use an exclamation mark at the end of an exclamatory sentence and following an interjection
- 6.101^{3,4,5,7,8,9,10,11} supply commas for words in a series, and for compound sentences
- 6.102 supply commas between cities and states, in dates, addresses, letter parts, direct quotations, direct addresses, appositives, adjective, adverbial clauses, and to introduce phrases and clauses
- 6.103^{2,3,4,5,7,8,9,10,11} supply apostrophes for contractions and possessive nouns
- 6.104^{3,4,5,9,10,11} supply quotation marks for direct quotations, dialogue, and titles of written works (e.g., stories, poems, etc)
- 6.105^{5,8,10,11} use colon with a list
- 6.106 use hyphen to divide syllables at end of writing line and in certain compound words (e.g., sister-in-law)
- 6.107 recognize and compose declarative, interrogative, exclamatory, and imperative sentences
- 6.108 identify and compose simple, compound, and complex sentences
- 6.109^{1,2,3,4,5,7,8,9,10,11} recognize and correct sentence fragments and run-on sentences
- 6.110^{1,2,3,4,5,7,8,9,10,11} identify and correct awkward sentence structure (e.g., misplaced modifiers)
- 6.111 identify and compose complete, simple, and compounds subjects and predicates
- 6.112^{4,5,8} organize information by combining sentences
- 6.113 recognize direct objects, indirect objects, predicate nominatives, and predicate adjectives
- 6.114 recognize singular, plural, and possessive nouns
- 6.115^{1,2,4,5,7,9,10,11} recognize proper and common nouns
- 6.116^{4,5,7,8,9} recognize and use the cases (e.g., nominative, objective, possessive) of pronouns (personal, compound

- personal, demonstrative, interrogative, relative, and indefinite) correctly by labeling the pronoun and its antecedent
- 6.117 recognize and understand antecedent of a pronoun
- 6.118 recognize and supply action, linking, and helping verbs
- 6.119^{1,2,3,4,5,7,8,9,10,11} write and edit text using past, present, and future tense correctly
- 6.120^{1,2,3,5,7,8,9,10,11} write and edit text using correct subject-verb agreement
- 6.121 recognize and use adjectives and adverbs
- 6.122⁸ differentiate the use of adjectives and adverbs (e.g., real and really)
- 6.123 recognize and use comparative and superlative adjectives correctly
- 6.124 identify prepositions and their prepositional phrases
- 6.125 identify and use coordinating and correlative conjunctions
- 6.126^{1,2,3,4,5,7,8,9,10,11} identify the purpose and audience in written expression
- 6.127^{4,5,7,9,10,11} identify topic sentences in written expression
- 6.128^{1,2,3,7,8,10,11} identify supporting sentences in written expression
- 6.129^{1,2,4,5,7,8} make decisions about relevant and appropriate content to eliminate extraneous sentences in writing
- 6.130^{5,7,8,9,10,11} identify and correct redundancy
- 6.131^{1,2,3,4,5,7,8,9,10,11} recognize and use editing skills in writing compositions

Study Skills

- 6.132^{5,7,8,9,10} identify and use the parts of a book including title page, copyright page, table of contents, glossary, index
- 6.133^{8,9,10} use the table of contents to determine the purpose of a book, the main idea of a book, locate general and specific information in a book, and

- determine the intent of a chapter
- 6.134 identify the index of a book and parts of an index entry (e.g., topic, subtopics, and cross-references)
- 6.135^{5,7,8,9,10} use an index to locate specific information
- 6.136^{3,4,5,7,9,11} demonstrate the appropriate use of the general reference sources of a dictionary, thesaurus, atlas, almanac, and encyclopedia
- 6.137^{5,7} identify a word that will come first in alphabetical order according to the second, third, fourth, and fifth letter
- 6.138^{3,5,7,9,10,11} use a set of guide words from a dictionary page to select a word to be found on that page
- 6.139^{3,5,7,8} use the dictionary pronunciation guide to determine how a word is divided into syllables, determine the sounds of dictionary entry words, and sounds of letters as they appear in words
- 6.140^{3,5,7,8,9,10,11} read the various meanings of a dictionary entry to determine the meaning of a word in a sentence
- 6.141 develop an awareness of word origin as contained in a dictionary
- 6.142 identify and use a thesaurus as a source for locating synonyms and antonyms
- 6.143^{5,7} identify and use sources for specific types of information (e.g., encyclopedia, atlas/maps, almanac, periodicals/magazines, newspapers, Readers Guide to Periodical Literature, and computer on-line services)
- 6.144 recognize and use the library as a source of reference
- 6.145 identify and use various resources in the library including fiction and non-fiction categories of books
- 6.146^{5,7,8} access and identify title, author, subject, call number, publisher, and copyright of

resources using the card catalog system or electronic systems

6.147^{9,10,11} know the purpose and use of graphic organizers (e.g., diagrams, webbing, T-chart, and flow chart)

6.148 know the purpose and interpret graphic aids (e.g., graphs, tables, charts, diagrams, maps, and illustrations)

6.149^{3,8} organize information into an outline by being able to categorize information into topics, subtopics, and details

6.150 identify and use the correct procedure for note taking, test taking, completing functional forms

6.151 access and use information from various audiovisuals resources (e.g., compact disks, tape, and films)

6.152 adjust reading rate according to purpose and nature of material

Computer/Technology

6.153 use appropriate software to practice and master sixth grade English language arts instructional objectives

6.154 use the editing functions of a

word processor (spell check, grammar checker, thesaurus, outliner) (6.60, 6.66, 6.87 and 6.131)

6.155 using a word processor, demonstrate correct keying, editing, and formatting techniques (6.65)

6.156 use a word processing program to copy and move text

6.157 use a word processing program to produce a report that contains centering, tabs, and more than one paragraph (6.60)

6.158 identify examples of copyright law violations and possible penalties

6.159 identify the role of technology in various communication careers

6.160 select and use appropriate software and/or other technologies to locate and use reference sources (6.33 and 6.151)

6.161 develop keyboarding skills: proper posture, finger placement, keying letters, numbers, symbols, and special keys (6.65)

6.162 use graphic software to create, read, interpret and organize information in the form of tables, graphs, diagrams and charts (6.148)

Grade Six Mathematics

The sixth grade objectives place continued emphasis on the study of whole numbers, decimals, and fractions. However, students need opportunities to apply their computation skills to real life applications. Calculators and computers may be used to solve problems. Decreased attention should be given to tedious paper and pencil computations. Sixth graders will continue to use manipulatives whenever new material is introduced or whenever it is needed to review previously taught material. The areas of probability, statistics, geometry, and pre-algebra will be stressed. Students will use ratios to compare data sets, make geometric constructions of three-dimensional figures, explore thoroughly the algebra strand, and solve problems involving circles, volume, and surface area.

Number Theory and Number Sense

6.1^{7,8} read, write, and identify the place value from billions through millionths using standard and expanded form

6.2^{7,8} compare and order the value of

whole numbers, fractions, and decimals from billions through ten-thousandths and write and model equivalences

6.3⁷ identify prime and composite numbers up to 100 using hundred chart, manipulatives, and calculators

- 6.4 identify and represent integers on a number line
- 6.5 identify and use the divisibility rules of 2,3,5, and 10
- 6.6_{7,8} identify pictorial representations of fractions and decimals
- 6.7₅ identify least common multiple or greatest common factor of two numbers

Computation and Estimation

- 6.8_{3,4,5,7,8} use estimation to solve problems with whole numbers (rounding, compatible numbers, clustering, front-end estimation with adjustment) and decimals, including money
- 6.9_{5,7,8} continue to reinforce whole number computation skills, applying them to problem-solving situations using estimation, mental math, calculators, and paper and pencil
- 6.10_{5,7,8} solve problems in context that involve addition, subtraction, multiplication, and division of fractions and mixed numbers with and without regrouping, including like and unlike denominators, expressing answers in simplest form using estimation, mental math, calculators, and paper and pencil
- 6.11_{5,7,8} solve problems in context that involve addition, subtraction, and multiplication of decimals through the ten-thousandths and division of decimals by decimal divisors using estimation, mental math, calculators, and paper and pencil
- 6.12_{7,8} use concrete materials, estimation, mental math, calculators, and paper and pencil to find the percent of a number
- 6.13 use order of operations to solve multi-step problems
- 6.14 identify a number that is 1,000 more or 1,000 less than a given number

Patterns, Functions, and Algebra

- 6.15 identify missing elements in numeric and geometric patterns and explore a variety of patterns, including perfect squares, square roots, exponents, and scientific notation
- 6.16_{5,7,8} use input/output models for functions (number machines).
- 6.17 solve equations using the identity property of addition ($8+n=8$) and the identity property of multiplication ($8 \cdot n=8$)
- 6.18 write the cross product of a proportion and solve the resulting equation.
- 6.19 represent and solve real world-problems by choosing the appropriate strategy, such as guess and check, make a table, write a proportion, find a pattern, work backwards, use a formula, write an equation, or make a scale drawing
- 6.20 write algebraic expressions for word expressions and evaluate them by replacing the variable with a given value
- 6.21_{5,7} solve equations with addition, subtraction, multiplication, and division of whole numbers, fractions, decimals, and integers using inverse operations, guess and check, and/or physical models
- 6.22 solve inequalities by using a number line
- 6.23 graph one-step linear equations in one variable in the first quadrant

Probability and Statistics

- 6.24_{5,7,8} collect, organize, display, and interpret data using line graphs, circle graphs, bar graphs, histograms, stem-and-leaf plots, tables, and charts
- 6.25_{5,7,8} create and solve problems involving the mean, median, mode, and range of a set of data

- 6.26 model practical problem-solving situations by constructing a sample space to determine probability
- 6.27 **determine the probability of a given event and express that probability as a ratio, decimal, or percent**
- 6.28 test the expected probability of an event against the actual outcome by carrying out an experiment using technology whenever appropriate
- 6.29_{5,7,8} **determine combinations and permutations (tree diagrams, probability experiments with and without replacement)**

Geometry

- 6.30_{7,8} classify lines as parallel, intersecting, perpendicular, or skew
- 6.31 draw, compare, and contrast the following quadrilaterals: parallelogram, rectangle, square, rhombus, and trapezoid along with the following polygons: pentagon, hexagon, octagon, decagon, and dodecagon
- 6.32_{4,5,7} **classify and compare line segments, angles, and polygons**
- 6.33 describe, identify, and build models of three dimensional figures, including prisms, pyramids, cylinders, and cones; locate, count, and record the faces, edges, and vertices of the prisms and pyramids
- 6.34 bisect a line segment and construct congruent angles using a compass and straightedge
- 6.35_{7,8} **identify the ordered pair for a point and locate the point in all four quadrants of the coordinate plane**
- 6.36 **recognize line symmetry and rotational symmetry**
- 6.37 **demonstrate flips, slides, and turns using congruent geometric figures**
- 6.38_{7,8} **identify the radius and diameter of a circle**

Measurement

- 6.39 use concrete materials to derive approximation for pi from actual measurements of circumference and diameter of a circle
- 6.40₇ create and solve problems by finding the circumference and area of a circle when given the radius or diameter
- 6.41_{7,8} **measure real objects in order to develop the formulas for perimeter and area; determine the perimeter and area of a triangle, square, rectangle, parallelogram, and irregular figures given the appropriate measures**
- 6.42 investigate and solve problems involving the volume and surface area of rectangular prisms using real objects and practical situations
- 6.43_{7,8} **use prior knowledge of customary and metric measures of length, mass/weight, and capacity/volume to solve problems**
- 6.44_{2,3,4,5,7,8} **solve application problems using measurement including elapsed time**
- 6.45_{5,7,8} **convert between units within the same system**
- 6.46_{2,3,4,5} **select appropriate units to determine length, weight, temperature, or volume using customary and metric units**
- 6.47_{7,8} **determine measurements indirectly from scale drawings**

Computer and Technology

- 6.48 use appropriate software to practice and master sixth grade instructional objectives in mathematics
- 6.49 use a calculator to do computations in problem-solving situations
- 6.50 use a calculator to solve problems with fractions and mixed numbers
- 6.51 use a calculator to add, subtract, and multiply problems with decimal through ten-thousandths

- and division of decimals by decimals
- 6.52 use a calculator to find the percent of a number
- 6.53 use a calculator to solve multi-step problems involving order of operations
- 6.54 use a calculator to find mean, median, mode, and range from a set of data
- 6.55 use graphing software to create line, circle, and bar graphs, histograms, tables and charts
- 6.56 identify spreadsheet terms (e.g., column, row, cell, formula, etc)
- 6.57 compare the difference between a paper spreadsheet and a computer spreadsheet (e.g., grade book, budget, sports statistics)
- 6.58 use a spreadsheet software template to enter and edit data
- 6.59 practice inputting data using correct keying, editing, and formatting techniques
- 6.60 identify examples of copyright law violations and possible penalties.
- 6.61 identify the role of technology in various mathematical careers

Grade Six Social Studies: Selected Regions of the World

The sixth grade program of study will provide an interdisciplinary examination of selected regions of the world: North America, South America, Western Europe, and the Middle East. The study of early civilizations and their impact on modern cultures will emphasize how cultures have adapted to environmental changes and have emerged into a global society.

Civics

- 6.1 identify and give examples of different forms of government
- 6.2 identify the aspects of strong leadership as they impact world events (e.g., Abe Lincoln)
- 6.3_{9,11} explain the purpose of political parties in governments and identify how special interest groups attempt to influence political parties and the political process
- 6.4_{4,8,9,10} explain the concept of separation of powers among executive, legislative, and judicial branches of democracies
- 6.5_{3,8,9,10} explain the functions of community support systems and their roles in local government (e.g., police, fire departments, city/town councils)
- 6.6 differentiate between the rights

and privileges of citizens of different countries

- 6.7 explain how individuals, companies, and countries may enter into a legally binding contract or treaty
- 6.8₁₀ identify the major court cases and civil rights acts that ended segregation in the United States
- 6.9₈ explain how a nation's constitution protects the rights of individuals, states, or political sub-divisions
- 6.10_{5,9} identify and analyze the effect of written documents which contributed to the formation of the American system of government

Economics

- 6.11_{4,7,9,10} explain how the law of supply and demand affects different countries and be able to interpret a supply and demand

- 6.15 identify strategies used by individuals, companies, and corporations to obtain profits
- 6.16^{4,5,7,9} identify where responsibility rests for upkeep of private property as opposed to public property
- 6.17 explain how trade cartels affect the world economy (e.g., Organization of Petroleum Exporting Countries) ◇
- 6.18 trace the development of treaties and organizations related to trade
- 6.19^{9,10} compare the basic characteristics of communism, socialism, and capitalism
- 6.20 compare production and consumption of goods and services in different countries

Geography

- 6.21^{3,8} locate and identify the continents, major climates, major water bodies, and natural resources (e.g., landforms such as peninsulas, mountain ranges, plateaus, river valleys, and lakes) and compare the relationship of people and the environment
- 6.22³ locate the major lakes of North America, South America, and Western Europe and explain their impact on exploration, settlement, and trade
- 6.23⁴ given a world time zone map, determine the time at one location when informed of the time at another location
- 6.24^{3,4} compare and contrast general characteristics of the population of selected regions with regard to religion, language, and movement
- 6.25^{3,4} interpret information from a population growth graph and a population pyramid (e.g., discuss the age of the population, growth potential, and life expectancy)
- 6.26^{3,5,8,11} solve problems dealing with map locations (e.g., use legends, keys, and scales) and interpret map information (e.g.,

climate, landforms, and resources)

- 6.27^{4,9} using maps, draw conclusions about the effects of geography on transportation, culture, economic activities, and population density and distribution ◇
- 6.28 explain the changing nature of earth's structure (e.g., earthquakes, volcanoes)
- 6.29 identify changes in population due to shifts from agricultural to industrial/urban development
- 6.30⁹ trace changes in the commercial form and function (e.g., agriculture center to trade center to industrial center) of urban areas in different regions of the world

History

- 6.31^{3,7,9} explain the role of climate and vegetation in determining how people feed, clothe, and shelter themselves (e.g., Woodland Indians, Plains Indians, Irish Farmers, Arab Nomads)
- 6.32 identify how Europeans benefited by expansion in the New World
- 6.33^{9,11} outline or build a timeline showing the influx of ethnic groups into North America
- 6.34^{4,10} explain the causes of the American Revolutionary War
- 6.35 explain the competition of the English and French on the American frontier
- 6.36¹⁰ explain how the Industrial Revolution affected the lives of people in Western Europe and the Americas
- 6.37^{8,11} develop a timeline of the major events of western migration in the United States and identify key land acquisitions on a map ◇
- 6.38^{5,8,9} outline events in the Abolitionist movement and its outside influences from the beginning to the conclusion (e.g., the Emancipation Proclamation, Amendments 13, 14, 15)

- 6.39_{4,7,11} identify key figures, philosophies, and events in the Minority Rights movements (e.g., Women's Rights, Civil Rights)
- 6.40 identify the major historical events in the development of transportation systems (aviation, rail, motor vehicles, and water transportation)
- 6.41 identify and evaluate the contributions of the classical civilizations and cite the reasons for their rise and fall
- 6.42₁₀ explain the basic tenets of major monotheistic religions (Judaism, Christianity, Islam) and their impact on Western civilizations
- 6.43 identify the contributions and characteristics of Arab/Islamic society
- 6.44 identify the contributions and characteristics of the Christian society (e.g., cultural, political, economic)
- 6.45 compare and contrast the worth of the individual in different societies
- 6.46 identify the causes and consequences of the Reformation
- 6.47 describe how the slave trade impacted political, economic, and social systems in North America, Latin America, Iberia, and Africa
- 6.48 identify examples of agricultural products exchanged between the New World and Old World during the Age of Exploration.
- 6.49 contrast the slavery system's development in the United States with West Africa, North Africa, the Middle East, and Iberia
- 6.50 analyze the growth of democracy during the nineteenth century in Western nations
- 6.51 explain the causes of World War I and the factors which led to United States involvement
- 6.52 explain the causes and effects of the economic depression of the 1930's
- 6.53 explain the political responses to the Depression (e.g., election of Mussolini, election of Hitler, rise of

militarism in Japan, and the New Deal in the United States)

- 6.54 identify the global tensions which contributed to the outbreak of World War II
- 6.55 explain the impact of the use of atomic weapons
- 6.56 analyze the threat to world security posed by terrorists and their impact on world peace
- 6.57 identify concerns for future generations (e.g., diminishing resources, medical issues, environmental issues, technological change, population, aging, space, destructive capability of man, crime, redistribution of people, changing nature of jobs, adaptability of the United States Constitution, intolerance, and changing roles of men and women)
- 6.58_{3,4,5,7,8,9,10,11} draw historical conclusions from informational maps, globes, charts, graphs, and timelines

Computer/Technology

- 6.59 use appropriate software to practice and master sixth grade social studies instructional objectives
- 6.60 use a variety of audio-visual and multi-media materials to practice and master sixth grade social studies instructional objectives
- 6.61 use graphics software to select the appropriate type of graph to display a set of data
- 6.62 use graphics software to create charts, graphs, and tables
- 6.63 practice inputting data using correct keying, editing, and formatting techniques
- 6.64 use a database to enter and edit data
- 6.65 use a database to sort and to search data for two criteria
- 6.66 identify examples of copyright law violations and possible penalties
- 6.67 identify ethical and unethical uses of technology

	the appropriate type of graph to display a set of data	6.65	use a database to sort and search data for two criteria
6.62	use graphics software to create charts, graphs, and tables	6.66	identify examples of copyright law violations and possible penalties
6.63	practice inputting data using correct keying, editing, and formatting techniques	6.67	identify ethical and unethical uses of technology
6.64	use a database to enter and edit data	6.68	project concerns for the future relating to technological changes
		6.69	identify the role of technology in various careers

Grade Six Science

The Coordinated and Thematic Science (CATS) Six objectives demonstrate, differentiate, and apply concepts of the living and designed worlds. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy in the fields of biology, chemistry, physics, and earth/space sciences. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of major science themes of systems, changes and models. Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction integrated in all activities. CATS Six reviews changes in the properties of matter, structures, functions, and adaptations of organisms, and the structure of the earth's systems. New major concepts introduced at the sixth grade level include motions and forces, ecosystems, diversity of life, energy transformations, plate tectonics, earth's resources and weather.

Nature of Science

6.1	develop a conceptual framework of scientific principles		knowledge by integrating reading, writing, mathematics and other disciplines with the science curriculum
6.2	recognize the interdependency of science themes and scientific concepts	6.8	use a variety of activities and investigations to produce a sense of wonder about the natural world and the joy of discovery
6.3	evaluate the interrelationships of scientific concepts to everyday life by making informed decisions and choices using scientific reasoning and knowledge ◇	6.9	recognize that the exploration of science is challenging and fulfilling and establishes patterns of lifelong curiosity and learning
6.4,5,7	investigate career choices in science and technology ◇		
6.5,7,8	apply skepticism, careful methods, logical reasoning, and/or creativity in investigating the observable universe (e.g., sun, earth, and moon relationships, changes in ecosystems, weather forecasting)		
6.6	recognize and appreciate that scientific knowledge is subject to modification as new information challenges current theories		
6.7	acquire a holistic view of scientific		

Scientific Attitudes/Habits of Mind

6.10	cooperate and collaborate to ask questions, find answers, solve problems and conduct investigations to further an appreciation and joy of scientific discovery ◇
6.11	process and integrate experiences with prior knowledge to formulate new ideas
6.12	understand that the study of science is a dynamic process and

the results are not always definite or complete

- 6.13_{4,5,7,8,9,10,11} formulate conclusions through close observations, logic, objectivity, perseverance and integrity in data collection (e.g., water quality, forces and motion, populations and ecosystems) ◇

Scientific Processes/Thinking Skills

- 6.14 recognize and apply facts, concepts, laws, and theories to explain phenomena
- 6.15_{3,4,5,7,8,9,10} compare and contrast objects, actions or phenomena according to similarities and differences in order to classify them (e.g., systems in living organisms, changes in rock record, elements)
- 6.16_{3,4,5,7,8,9,10,11} construct and use charts, graphs, and tables to organize, display, interpret, analyze and explain data (e.g., extrapolation, interpolation) ◇
- 6.17_{3,4,5,7,8,9,10} use inferential reasoning to make logical conclusions from collected data (e.g., causes and effects) ◇
- 6.18_{3,4,5,7,8,9,10,11} utilize experimentation to demonstrate scientific processes (e.g., formulating questions, predicting, forming hypotheses, quantifying, identifying dependent and independent variables)
- 6.19_{3,4,5,7,8,9,10,11} develop rational thinking processes that underlie scientific approaches to problem solving by employing critical-thinking skills in applying scientific knowledge, using imagination and creativity while working individually or cooperatively (e.g., how systems work together, factors which impact the environment, ecological consequences of human interactions) ◇
- 6.20_{3,4,5,7,8,9,10,11} develop skills in the use of laboratory materials and

equipment; and proper communication of scientific data collected (e.g., meter sticks, balances, thermometers, scales, graduated cylinders) ◇

Laboratory Investigations/Hands-On Learning

- 6.21 engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and laboratory skills
- 6.22 use a variety of materials and scientific instruments to conduct explorations and investigations of the natural world to explain science concepts (e.g., measure environmental conditions using appropriate instruments) ◇
- 6.23 demonstrate safe techniques for handling, manipulating and caring for science materials, equipment and living organisms ◇

Science Themes and Subject Matter

- 6.24 develop through the study of interdependent themes including systems, changes, and models an understanding of biological, earth/space, and physical science concepts
- 6.25 associate hands-on activities to daily life experiences
- 6.26 express ideas that illustrate the relevance of science, technology, and societal issues within the lessons
- 6.27_{4,8,9,10,11} describe the interactions of various cycles that provide energy and/or materials for growth, repair and shelter (e.g., carbon cycle, water cycle, nitrogen cycle, decomposition, photosynthesis, respiration, transpiration)
- 6.28_{4,5,7,8} identify the structures of living things and explain their functions (e.g., similarities and

- differences in organisms, complexity in organisms, similarities and differences among closely related groups) - *systems*
- 6.29_{4,5,7} classify living things according to their structures and functions (e.g., dichotomous keys, field guides) - *systems*
- 6.30_{4,5,7,8,9,10} explain changes in common patterns of interdependence among organisms (e.g., biotic and abiotic factors) - *changes*
- 6.31 demonstrate changes in populations of organisms due to limiting environmental factors (e.g., food supply, predators, disease, habitat) - *changes*
- 6.32_{4,5} analyze the ecological consequences of human interactions with the environment (e.g., renewable and non-renewable resources) - *models*
- 6.33_{5,8,10} interpret growth patterns in different plants (e.g., mosses, ferns, perennials, biennials, woody plants, herbaceous plants) - *models*
- 6.34_{3,4,5,7} demonstrate how the various systems provide for the needs of a living organism (e.g., plants, animals, fungi) - *models*
- 6.35 construct models of plant and animal cells which show the basic parts (e.g., cytoplasm, cell wall, cell membrane, nucleus, chloroplasts) - *models*
- 6.36_{3,4,5,7,8,9,10,11} classify materials according to physical and chemical properties - *systems*
- 6.37_{3,4,5,7,8,9,10,11} identify processes as physical or chemical changes - *systems*
- 6.38_{4,8} identify food as sources of energy in animals - *systems*
- 6.39_{1,11} research historical reasons for classifying elements and compounds (e.g., Greek philosophers, European alchemists) - *systems*
- 6.40_{8,10,11} apply knowledge of physical and chemical properties to examine samples of water - *systems*
- 6.41₁₀ identify the atom as the smallest particle of an element - *systems*
- 6.42_{3,4,5,7,8,9,10,11} investigate the formation of simple mixtures - *changes*
- 6.43₉ investigate methods for separating mixtures (e.g., evaporation, filtration, chromatography, screening) - *changes*
- 6.44_{3,8,10,11} using indicators, identify substances as acidic, basic, or neutral - *changes*
- 6.45₁₁ identify the symbols of elements - *models*
- 6.46₁₁ using the periodic table, identify elements as metals or non-metals - *models*
- 6.47₁₀ draw Bohr's models to indicate the placement of protons and neutrons in the nucleus and electrons outside the nucleus - *models*
- 6.48_{5,7,8,9,10,11} describe properties of matter (e.g., inertia, gravitational interaction, specific heat, malleability, melting point, density) - *systems*
- 6.49 differentiate concepts related to the electromagnetic spectrum (e.g., wavelengths, frequencies, visible light) - *systems*
- 6.50_{8,11} interpret the relationship of mass to gravitational force (e.g., larger the mass the larger the gravitational pull, the closer the objects the stronger the pull) - *systems*
- 6.51_{4,5,8,11} examine simple machines and the forces involved (e.g., levers, pulleys) - *systems*
- 6.52₁₁ describe the flow of heat between objects (e.g., hot air rises, absorption and release of heat by metals) - *systems*
- 6.53₇ identify factors affecting reflection and refraction (e.g., nature of surfaces, color, density of medium) - *systems*
- 6.54_{5,11} apply the effects of balanced and unbalanced forces on motion of objects (e.g., inertia, addition and subtraction of forces in a straight line) -

changes

- 6.55 describe the relationship between different frequencies and receivers (e.g., eyes, ears, radios) - **changes**
- 6.56₄ explain absorption and reflection of light by different objects of various colors and textures (e.g., transparent, translucent, opaque, different colors) - **changes**
- 6.57_{3,4,11} explain motion in terms of frames of reference (e.g., motions on earth, ball thrown in or from moving vehicle) - **changes**
- 6.58₄ relate the length of a shadow to the position or source of illumination (e.g., sundials) - **changes**
- 6.59 utilize a model to represent direction and amount of force (e.g., arrow point to show direction) - **models**
- 6.60 diagram simple parallel and series circuits (e.g., bulbs, battery, wires, switch) - **models**
- 6.61_{5,7,8,9,10} analyze graphs depicting motion, predict future motion (e.g., graphs, tables, charts) - **models**
- 6.62 relate wave lengths and/or frequency to position on electromagnetic spectrum (e.g., colors, x-ray) - **models**
- 6.63 review fundamental earth science concepts including celestial relationships, air has mass and exerts pressure - **systems**
- 6.64_{4,5} recognize that stars are different temperatures and ages - **systems**
- 6.65_{3,5,7,8,10,11} identify and investigate Earth's resources (e.g., use and abuse, energy sources, how man's utilization affects the environment) - **changes**
- 6.66_{9,10,11} probe atmospheric conditions (e.g., composition, interactions) - **changes**
- 6.67 summarize the forces and results of plate tectonics - **changes**
- 6.68 describe the factors involved in causing catastrophic meteorological and geological

events - changes

- 6.69 develop an understanding in the change's of the rock record - **changes**
- 6.70_{3,4,5,8,10,11} identify and measure changes in weather (e.g., air temperature, speed and direction of wind, humidity, precipitation) - **changes**
- 6.71_{4,7,8,9,10,11} investigate weather (e.g., forecasting, data, methods, making and using maps, thunderstorms, tornadoes, hurricanes, acid rain) - **models**
- 6.72_{4,9,10,11} construct and explain various models (e.g., solar eclipses, lunar eclipses, rock formation including sedimentary, igneous and metamorphic) - **models**

Science History

- 6.73_{5,7} articulate the historical significance of scientific discoveries (e.g., as influenced by technological demands, competition, controversy, world events, personalities, societal issues)
- 6.74_{5,7} compare the evolution of science concepts and theories (e.g., cells, plate tectonics, atoms, genetics)
- 6.75_{5,7} examine the contributions of men and women of diverse cultures to the development of science

Science, Technology, and Society

- 6.76_{5,7,8,10} give examples of how science and technology are used in daily living ◇
- 6.77_{5,7,8,10} use the knowledge of science and technology to make personal decisions at the local and global levels ◇
- 6.78 evaluate and critically analyze mass media reports of scientific developments and events ◇
- 6.79_{5,7,8,10} critically analyze the effects and impacts of science and technology on global and local problems (e.g., mining,

manufacturing, recycling,
farming, water quality)

6.80^{5,7,8,10} explore the connections
between science, technology,
society, and career
opportunities

6.81^{5,7,8,10} analyze the positive and
negative effects of technology
on society and the influence of
societal pressures on the
direction of technological
advances

Computer/Technology

6.82 use appropriate software, audio-
visual and/or multimedia
materials to practice and master
sixth grade instructional
objectives in science

6.83 using the graphing application of
appropriate software, select the
suitable chart, table, or graph to
display a set of data

6.84 using the graphing application of
appropriate software, create
tables, charts, and/or graphs

6.85 use a calculator to perform
mathematical functions in data
analysis

6.86 use a variety of instruments (i.e.
probes, thermometers, measuring
devices) to perform
measurements and record data

6.87 use appropriate software to
practice reading, interpreting,

analyzing, and evaluating the
data on a map, chart, graph,
table, and diagram

6.88 use appropriate software,
practice extrapolating and
interpolating information from a
graph

6.89 use appropriate software to
practice drawing conclusions
from maps, diagrams, charts,
graphs, and tables

6.90 use appropriate software to
practice making predictions,
inferences, and hypothesis from
maps, diagrams, charts, graphs,
and tables

6.91 use appropriate software to
practice reading an instrument

6.92 input data using correct keying,
editing, and formatting techniques

6.93 use a database to sort and
search data given one and/or two
criteria

6.94 identify examples of copyright law
violations and possible penalties

6.95 identify ethical and unethical uses
of technology

6.96 recognize concerns for the future
as they relate to technological
changes

6.97 identify the role of technology in
various careers

6.98 retrieve current data from a
variety of electronic sources
which might include the Internet,
and/or software reference
programs

Grade Seven

English Language Arts

English Language Arts in the seventh grade continues to build, expand, and refine prior learning. Listening and speaking instruction rigor is regarded as a skill that will help prepare students to interact and express themselves among peers, at home, and in the community. Reading comprehension and vocabulary will be developed through the use of a wide variety of literary genre. Strategies that are essential to each genre will be targeted. Writing utilizes prewriting, composing, revising, and editing skills to produce error-free and content-rich communication. Correct spelling will be emphasized in all writing across the curriculum. Strategies that enable students to develop spelling skill and awareness of their individual weaknesses will be utilized. Language instruction is addressed through mechanics and expression. Ability to gather, organize, interpret, and report on information gained through reading or research will be fulfilled through study skill development.

Listening/Speaking

- 7.1 identify and correct usage errors in oral communication ◇
- 7.2 exhibit appropriate speaking etiquette (e.g., speaking in turn, using proper communication in technology, demonstrating interpersonal communication) ◇
- 7.3 ^{1,2,3,5,6,8} **understand multi-step oral directions to perform a task** ◇
- 7.4 order events chronologically in a given passage ◇
- 7.5 use public speaking strategies to prepare formal and informal speaking presentations ◇
- 7.6 identify and correct grammar errors in oral communication ◇
- 7.7 listen to oral communication using proper etiquette (e.g., proper theater behavior) ◇
- 7.8 listen to oral communication to retell information ◇
- 7.9 ^{2,4,5,6,8} **listen to specific information and construct meaning beyond the text (e.g., character's feeling)** ◇
- 7.10 ^{5,6,8} **listen to oral communications and identify a synonym for a dictated word** ◇
- 7.11 ^{2,3,4,5,6,8} **listen to oral communications and distinguish between fact and opinion** ◇
- 7.12 listen to oral communications to

determine author's purpose ◇

- 7.13 listen to oral communications to compare and contrast information ◇
- 7.14 listen to oral communications to predict outcomes ◇
- 7.15 draw conclusions and infer information from listening to oral communication ◇
- 7.16 ^{1,2,5,6,8} **think critically about the selection to foster exploration, questioning, and imagining** ◇
- 7.17 ^{1,2,5,6,8} **listen to oral communications and critique, evaluate, and summarize content from different perspectives** ◇
- 7.18 ^{5,6,8} relate personal experiences to information heard to construct new meaning ◇

Reading Comprehension

- 7.19 ^{1,2,3,4,5,6,8,9,10,11} **read literary works by national and international authors to include but not be limited to biographies, short stories, science fiction, tall tales, legends, folktales, contemporary fiction, poetry, plays, and essays** ◇
- 7.20 respond to a wide variety of literary genre ◇
- 7.21 ^{1,2,3,4,5,6,8,9,10,11} **use setting, plot, characterization, and style to determine a text's genre (e.g., science fiction, folktales)**

- 7.22 locate details in a passage to promote initial understanding of text
- 7.23_{k,2,4,8,9,10,11} determine main idea of a passage ◇
- 7.24_{k,2,3,4,5,6,9,10,11} make a logical prediction based on events in a passage ◇
- 7.25_{k,2,3,4,5,6,8,9,10,11} draw a conclusion to describe a character based on character's thoughts and actions
- 7.26_{k,3,4,5,6,9,11} interpret a character's feeling based on content of a story
- 7.27_{8,10,11} determine the meaning of persuasive language and propaganda to determine meaning of information in functional text (e.g., advertisements) ◇
- 7.28_{6,8,9,10,11} make inferences from functional text to make analysis of information (e.g., advertisements) ◇
- 7.29_{8,9,10,11} justify conclusions reached from textbook information ◇
- 7.30 identify other sources of information to support conclusion made from textbook information ◇
- 7.31_{6,9,11} identify and apply appropriate strategies to aid comprehension ◇
- 7.32_{5,9,10,11} use figurative language and jargon to determine meaning of information in functional text
- 7.33_{3,5,10} identify other sources of information for a textbook topic ◇
- 7.34_{5,8,9,10} use graphic organizers to construct meaning of textbook passage showing important ideas and relationships among those ideas ◇
- 7.35_{9,10} use setting, plot, characterization and author's style to determine an appropriate extension to the story
- 7.36_{4,6,8,9,10} distinguish between information based on fact and information based on opinion ◇
- 7.37_{2,3,4,5,6,8,9,10,11} infer meaning of a word used in context ◇

Reading Vocabulary

- 7.38_{k,2,3,4,5,8,9,10,11} use context clues to determine the precise word to complete a given statement ◇
- 7.39 supply a synonym or anonym for a given word ◇
- 7.40_{2,3,4,5,6,8,9,10,11} determine the synonym for words in text to improve quality ◇
- 7.41 determine whether the word has a literal or figurative meaning
- 7.42 choose from multiple word meanings to complete a statement ◇
- 7.43_{2,3,4,5,6,8,9,10,11} determine the definition of multiple meanings words used in context ◇
- 7.44 using given words, find the meaning and word origin
- 7.45 identify positional words and time words in a given passage ◇
- 7.46 determine root/base word from a list of affixed words
- 7.47 use a dictionary to locate meaning of words used in a statement ◇
- 7.48 generate new words given a list of prefixes and suffixes
- 7.49 determine meaning of word based on its affix
- 7.50 supply appropriate word to complete a given analogy ◇

Writing

- 7.51_{4,10} use prewriting and drafting strategies to address specific writing purposes ◇
- 7.52_{4,10} compose a composition that is focused, coherent, and has a clear and logical progression of ideas ◇
- 7.53_{4,10} compose a composition that shows a smooth transition to produce a cohesive piece of writing ◇
- 7.54_{4,10} use a writing prompt to develop a composition on a given topic ◇
- 7.55_{4,10} use writing strategies to write for different audiences ◇
- 7.56_{4,10} compose a composition with a beginning, middle, and end ◇

- 7.57_{4,10} **compose the piece of writing that includes specific, relevant details** ◇
- 7.58_{4,10} **compose sentences that are complete, varied, and economical** ◇
- 7.59_{4,10} **use writing strategies to compose various types of paragraphs (e.g., informative, narrative, expository, persuasive, chronologically ordered, explanatory, compare/contrast, and cause/effect)** ◇
- 7.60_{4,10} **use writing strategies to address specific types of writing (e.g., newspaper article, essay, journal, friendly letter, business letter, research, and poetry)**
- 7.61_{4,10} **use revision strategies as necessary (e.g., varying sentence length, changing order, making words more exact, and edit for organizational errors)** ◇
- 7.62_{4,10} **use editing strategies to correct usage, punctuation, and spelling errors** ◇
- 7.63_{4,10} **demonstrate continuous progress toward mastery of penmanship**
- 7.64_{4,10} **demonstrate continuous progress toward control of keyboarding in the writing process** ◇
- 7.65 **use electronic and traditional editing strategies (e.g., symbols, dictionaries) to correct spelling errors in computer generated work (e.g., proper names, homophones, [in, inn].)** ◇
- Spelling**
- 7.66 **acquire a written vocabulary from a wide variety of instructional sources and activities that demonstrate accurate spelling and pronunciation in their written communication across the curriculum** ◇
- 7.67 **develop spelling competency by recognizing one's own spelling weakness**
- 7.68 **use metacognition as a strategy for self-assessment** ◇
- 7.69 **use the spelling strategy of focusing on problem parts of words that are commonly misspelled (e.g., all right [alright], does [dose])** ◇
- 7.70 **use meaning as a strategy for spelling words correctly (e.g., bi means two, tri means three, sub means under)**
- 7.71 **use visual and pronunciation cues as strategies for spelling (e.g., dessert, desert)** ◇
- 7.72 **use memorization as a strategy for spelling (e.g., colonel)** ◇
- 7.73 **create mnemonic devices to assist in spelling problem parts of words (e.g., mosquito --A mosquito is hard to avoid. You'd like for the mosquito to "quit" biting you)** ◇
- 7.74 **use visual and auditory cues as a strategy to spell (e.g., ise, ice, ize sh, ti, ci)** ◇
- 7.75 **use correct and exaggerated pronunciation as a strategy to spell words (e.g., identity-iden- tity)** ◇
- 7.76 **identify a mismatch between homophones or homophone confusion (e.g., dear-deer, hear-here)** ◇
- 7.77 **distinguish between misuse and proper spelling of a contraction and possessive** ◇
- 7.78 **identify and spell common homophones/homonyms and homographs** ◇
- 7.79 **spell words containing the vowel variant (ou, ie, ey)** ◇
- 7.80 **use generalization to spell words containing "c" sounded as "k" (e.g., candle)** ◇
- 7.81 **spell words with the common suffix "tion" and "ly" (e.g., subtraction, lovely)** ◇
- 7.82 **spell words containing "oi" and "oy" (e.g., boil, toy)** ◇
- 7.83 **spell words with "our" sounded as "or" (e.g., pour,**

- four) ◇
- 7.84 form inflectional endings when spelling words ending in "e" (e.g., stately) ◇
- 7.85 form comparative forms of words ending in "y" (e.g., easy, easier, easiest) ◇
- 7.86 form past tense of words ending in "y" (e.g., played) ◇
- 7.87 use electronic as well as traditional editing resources to correct spelling errors (e.g., electronic spell checker, dictionary, thesaurus) ◇

Language

- 7.88^{1,2,3,4,5,6,8,9,10,11} capitalize every important word in the names of particular people, places, or things (e.g., Melvin J. Harris, District of Columbia, Lincoln Memorial, Bill of Rights) ◇
- 7.89^{1,2,3,4,5,6,8,9,10,11} capitalize title or their abbreviations when used with a person's name (e.g., Governor John Dodridge, Senator Stone, Dr. John, President Washington) ◇
- 7.90^{6,8,10,11} capitalize proper adjectives (e.g., We ate at a German restaurant.) ◇
- 7.91 capitalize the names of organizations, businesses, institutions, and agencies (e.g., National Football Association, The Status Company) ◇
- 7.92 capitalize the first and last words and all important words in the titles of books, newspapers, magazines, stories, songs, poems, reports, and outlines (e.g., articles, short conjunctions, and short prepositions are not capitalized unless they are the first and last word) ◇
- 7.93 capitalize the first word of each main topic and subtopic in an outline ◇
- 7.94 capitalize nationalities, languages, religions, and religious terms ◇
- 7.95 capitalize words showing family relationships only when they are used before a name, or when they take the place of a name (e.g., My mom is nice. When I came home from school Mom wasn't home.)
- 7.96^{8,9,10,11} capitalize regions of the United States (e.g., the Southwest) ◇
- 7.97 capitalize names of documents (e.g., Declaration of Independence) ◇
- 7.98^{8,9} use comma with an introductory phrase ◇
- 7.99^{4,6,8,9,10,11} use commas with conjunction between clauses (e.g., We had lunch in the park, and we arrived at the parade in time for the bands.) ◇
- 7.100^{5,8,9,10,11} use commas to set off an appositive from the rest of the sentence when the appositive is not necessary to the meaning of the sentence (e.g., West Virginia, the Mountain State, is very scenic.) ◇
- 7.101 use a comma following an introductory prepositional phrase (e.g., Inside the right-hand dresser drawer, you will find the scarf.) ◇
- 7.102^{8,9,10,11} use semicolon between independent clauses ◇
- 7.103^{4,5,6,9,10,11} form the possessive of a singular noun by adding an apostrophe and s (e.g., baby's rattle) ◇
- 7.104^{4,5,6,9,10,11} form the plural possessive of a noun that ends in s by adding apostrophe only (e.g., teachers' lounge) ◇
- 7.105^{4,5,6,9,10,11} form the possessive of a plural noun that does not end in s by adding an apostrophe and s (e.g., women's) ◇
- 7.106 use a hyphen to join the parts of compound numbers, to join two or more words that work together as one adjective before a noun, or to divide a word at the end of a line (e.g., fifty-five, well-developed paragraph) ◇
- 7.107 use dashes to show a break of

- thought in a sentence (e.g., The posters – curiously enough – are done in watercolor.) ◇
- 7.108 use parentheses to enclose an explanation that is not of major importance to a sentence (e.g., Read chapter 10 (page 26) to find the answer.) ◇
- 7.109^{1,2,4,5,6,9,10,11} recognize proper and common nouns ◇
- 7.110 use correct subject-verb agreement with an intervening phrase ◇
- 7.111₈ use the correct subject-verb agreement with a compound subject ◇
- 7.112 use a compound subject with “or” or “nor” with a verb that agrees with the nearer subject (e.g., He or his brothers are ready to work.) ◇
- 7.113^{8,9,10,11} use a pronoun that agrees with the noun to which it refers ◇
- 7.114^{5,6,8,9,10,11} use correct pronoun case (e.g., nominative, objective, possessive) ◇
- 7.115 use the different types of pronouns correctly in written expression (e.g., personal, compound personal, demonstrative, indefinite, interrogative, and relative) ◇
- 7.116 use in a sentence and identify a personal pronoun whose antecedent is an indefinite pronoun ◇
- 7.117^{3,4,6,10,11} identify and use adjectives correctly ◇
- 7.118 differentiate the use of adjectives and adverbs ◇
- 7.119 identify and correct sentence fragments ◇
- 7.120^{1,2,3,4,5,6,8,9,10,11} identify and correct awkward sentence construction (e.g., The bird flew near the girl with red feathers.) ◇
- 7.121^{1,2,3,6,8,10,11} identify and correct run-on sentences ◇
- 7.122^{1,2,3,6,8,10,14} identify supporting sentences in written expression ◇
- 7.123^{3,4,5,6,9,10,11} identify topic sentence in written expression ◇
- 7.124^{8,10,11} identify and correct redundancy ◇
- 7.125^{1,2,4,5,6,8,9,10,11} make decisions about relevant and appropriate content to eliminate extraneous sentences in writing ◇
- 7.126^{8,10,11} identify and use appropriate transitions in writings (e.g., however, thus, and therefore) ◇
- 7.127^{8,10,11} identify and correct faulty subordination (e.g., I like baseball since I want a car.) ◇
- 7.128^{8,10,11} identify appropriate use of descriptive language in written expression ◇
- 7.129 use indefinite articles correctly in writing and editing (e.g., “a” and “an”) ◇
- 7.130^{3,4,6,8,10,11} write and edit text using correct past perfect tense ◇
- 7.131 use “have” and “of” correctly when editing text ◇
- 7.132^{1,2,3,4,6,8,10,11} identify purpose and audience in written expression ◇

Study Skills

- 7.133^{4,9} demonstrate appropriate use of parts of a book such as title page, introduction, table of contents, appendix, and references
- 7.134^{4,9,10} use title page, copyright page, table of contents, appendix, bibliography, glossary, and index to locate specified information
- 7.135 predict the name of an informational book given chapter names
- 7.136^{4,9,10} demonstrate appropriate use of the table of contents to locate where chapter specific information can be found
- 7.137^{3,4,5,6,9,11} demonstrate appropriate use of the general reference sources (e.g., dictionary,

- thesaurus, atlas, almanac, and encyclopedia, Reader's Guide, Books in Print) ◇
- 7.138_{5,6} identify a word that will come first in alphabetical order according to its third, fourth, and fifth letter
- 7.139 identify parts of a dictionary entry
- 7.140_{3,5,6,9,10,11} use a set of guide words from a dictionary page to select the word that would be found on that page, preceding page, and subsequent page
- 7.141_{3,5,8,9,10,11} use the various meanings of a dictionary entry to determine the meaning of a word in a sentence ◇
- 7.142_{5,6,9,10,11} use dictionary entries to select the best meaning for a multi-meaning word when used in context ◇
- 7.143_{5,6,8,9,10,11} determine which entry in a dictionary definition best fits meaning of a word in a sentence ◇
- 7.144_{3,4,5,6} use pronunciation guide to determine sounds of letters as they appear in individual words
- 7.145_{3,4,5,6} use pronunciation guide to determine number of syllables in a word
- 7.146 know how to access reading material and resources in traditional or electronic catalog systems ◇
- 7.147_{9,10,11} use the card catalog and electronic catalog systems to determine a book's call number, title, subject, copyright, publisher, and illustrator ◇
- 7.148 adjust reading rate according to purpose, prior knowledge, and nature of material
- 7.149 use skimming to obtain an overview or general idea of a selection ◇
- 7.150 use scanning to locate specific information ◇
- 7.151 differentiate when to use skimming and when to use scanning to obtain information
- 7.152 write a paragraph using prepared notes ◇
- 7.153 write a paragraph using an outline ◇
- 7.154 develop an outline that includes topics, subtopics, and details ◇
- 7.155_{3,4} identify a main heading from a list of topics in order to organize a report ◇
- 7.156 know the purpose and use of graphic organizers (e.g., web, Venn diagram, semantic feature, analysis, T-chart)
- 7.157_{4,11} construct and read a graphic organizer for a written report for a content area
- 7.158 know the purpose and be able to interpret graphic aids (e.g., graphs, charts, tables, diagrams, maps, illustrations, schedules, and timelines)
- 7.159 become familiar with words used on standardized tests (e.g., paraphrase, enumerate, categorize, analyze, rank)
- 7.160 become familiar with modifiers used in testing material (e.g., all, none, invariably, and seldom)
- 7.161 become familiar with various test formats (e.g., objective, essay, quantitative, and standardized)
- 7.162 use appropriate test taking strategies based on format

Computer/Technology

- 7.163 use appropriate software to practice and master seventh grade English language arts instructional objectives
- 7.164 use a word processor to edit a document (adjust margins, select justification, change fonts, and paginate) (7.60)
- 7.165 using a word processor, demonstrate correct keying, editing, and formatting techniques (7.60)
- 7.166 identify work produced by using technology as intellectual property and thus protected copyright laws
- 7.167 discriminate between ethical and unethical access to information
- 7.168 identify technological skills

- required for various careers
- 7.169 select and use appropriate software and/or other technologies to locate and use reference sources (7.137)
- 7.170 develop keyboarding skills: proper posture, finger placement, keying letters, numbers, symbols, and special keys (7.64)
- 7.171 use graphic software to create, read, interpret and organize information in the form of tables, graphs, diagrams and charts
- 7.172 use a word processing program to copy and move text (7.61)
- 7.173 use the editing functions of a word processor (spell check, grammar checker, thesaurus, outliner) (7.62, 7.65 and 7.87)

Grade Seven Mathematics

Pre-Algebra with Geometry

Replaces 7th Grade General Mathematics

The seventh grade year is an introduction to high school subjects such as algebra, geometry, probability, and statistics. Instruction focuses on preparing the student for Algebra I in the 8th grade. With less emphasis on paper/pencil computation, calculators are emphasized in all facets of the mathematics daily work as well as test situations. Students should, by this time, have a mastery of general mathematics topics; however, review of all basic mathematics skills occurs in a relevant context. Problem solving is embedded in the curriculum utilizing a variety of new concepts, while cooperative learning promotes communication skills. Students are routinely permitted to use available technology.

Number Theory and Number Sense

- 7.1_{6,8} compare and order integers, decimals and fractions using symbols (<,>=) manipulatives, or graphing on a number line
- 7.2₈ find powers, squares, and square roots using manipulatives, models, calculators, tables, and mental math
- 7.3 determine the effect of absolute value on a number or expression
- 7.4₈ convert between fractions, mixed numbers, decimals, whole numbers, and percents mentally, on paper, and with a calculator
- 7.5 recognize and write rational numbers in the form a/b
- 7.6_{6,8} identify pictorial representations of fractions and decimals
- 7.7_{5,6,8} identify the place value of a digit in a decimal
- 7.8₈ distinguish between prime and composite numbers

Computation and Estimation

- 7.9 add, subtract, multiply, and divide integers using mental math, paper/pencil, and calculators
- 7.10 apply the commutative property of addition and multiplication, associative property of addition and multiplication, distributive property, identity property of addition and multiplication, inverse property of addition, and multiplicative property of zero to perform mental math operations with integers and whole numbers and to simplify expressions $\diamond$
- 7.11₈ select and use an appropriate process for estimating and computing fractions, decimals, percents, and whole numbers using mental math, paper/pencil, calculator and computer methods in traditional, non-routine

- application problems ◇
- 7.12_{5,6,8} use appropriate estimation strategies (overestimation, underestimation, front-end estimation, range of estimates) in problem situations including evaluating the reasonableness of a solution and missing information ◇

Patterns, Functions, and Algebra

- 7.13_{5,6,8} find missing elements in a variety of number patterns including sequences and series; apply a rule to generate a number pattern; use input/output models for functions (number machines) ◇
- 7.14_{5,6,8} simplify numerical expressions including whole numbers, integers, absolute value, and exponents using the order of operations ◇
- 7.15_{8,9,10,11} evaluate algebraic expressions containing variables with whole numbers, integers, absolute value, and exponents using the order of operations and exponent rules ◇
- 7.16 add, subtract, multiply, and divide monomials, and put it in simplest form
- 7.17 find and use the Greatest Common Factor and Least Common Multiple of a set of monomials or algebraic fractions using prime factorization and exponent rules
- 7.18_{8,9,10,11} create algebraic expressions and equations from written statements ◇
- 7.19_{8,9,10,11} use ratios and proportions to represent and solve a variety of problems, such as rates ◇
- 7.20₈ use and apply formulas in problem solving situations such as perimeter, circumference, area, volume, surface area, distance, and Celsius/Fahrenheit ◇

- 7.21 use patterns to develop the concept of negative exponents
- 7.22₈ use and apply scientific notation containing positive and negative exponents in problem solving situations ◇
- 7.23 solve linear equations containing whole numbers and integers using substitution or inverse operations for addition, subtraction, multiplication, and division
- 7.24 graph inequalities (e.g., $x > 7$) on a number line and explain the solution sets
- 7.25_{3,4,5,6,8,9,10,11} locate and plot points and lines with the Cartesian Coordinate Plane using ordered pairs and a table of values
- 7.26_{9,10,11} recognize the slope of a line through inspection and modeling and relate slope to real world situations

Probability and Statistics

- 7.27₈ read and interpret multiple line graphs ◇
- 7.28_{8,9,10,11} express probability as a ratio, decimal, or percent and predict outcomes from the data obtained through student experimentation or written information ◇
- 7.29_{9,10,11} construct sample spaces by listing, tree diagrams, and frequency distribution tables, and calculate combinations and permutations
- 7.30_{8,9,10,11} extrapolate information from multiple-line graphs, circle graphs, bar graphs, histograms, tables, and frequency distributions (tally charts) ◇
- 7.31_{9,10,11} collect, organize, graphically represent, and interpret data using frequency distributions, line-plots, stem-and-leaf plots, box-and-whisker plots, and scatter plots ◇
- 7.32_{8,9,10,11} determine measures of central tendency (mean, median, mode, range) and

dispersion from data, graphs, tables, and experiments ◇

- 7.33_{5,6,8} determine combinations and permutations

Geometry with Measurement

- 7.34₈ identify, describe, and classify plane and space geometric figures including triangles, quadrilaterals, pentagons, hexagons, octagons, decagons, dodecagons, prisms, pyramids, cones, and spheres
- 7.35 construct congruent segments and angles, perpendicular bisectors of segments, and angle bisectors using straightedge/compass, computer, and paper folding
- 7.36_{2,3,4,5,6,8,9,10,11} apply transformations (rotations, reflections, translations) to plane figures using physical models and graph paper
- 7.37_{2,3,4,5,6,8,9,10,11} discover lines of symmetry in any plane geometric figure; apply and demonstrate by paper folding, mirrors, and drawings
- 7.38_{6,8,9,10,11} define similar and congruent plane geometric figures and apply in problem solving situations involving proportions and scale drawings ◇
- 7.39_{8,9,10,11} find perimeter, area, circumference, and volume of plane and solid geometric figures using measurement, diagrams, or calculations
- 7.40_{9,10,11} use the Pythagorean Theorem to find the length of any side of a right triangle
- 7.41 find length, mass, and capacity in both metric and standard units using indirect and direct methods
- 7.42_{5,6,8} solve application problems using measurement including elapsed time and conversion of units within the same system ◇
- 7.43_{6,8} identify radius and diameter
- 7.44₈ identify parallel and perpendicular lines
- 7.45_{5,6} classify angles

Computer and Technology

- 7.46 use appropriate software to practice and master seventh grade instructional objectives in mathematics ◇
- 7.47 use a calculator to find squares, square roots, and exponential numbers (7.2)
- 7.48 use a calculator to convert between fractions, mixed numbers, decimals, whole numbers, and percents (7.4)
- 7.49 use a calculator to solve problems with integers (7.6)
- 7.50 use a calculator to find combinations and permutations (7.26)
- 7.51 use a calculator to determine measures of central tendency and dispersion from data, graphs, tables, and experiments (7.29)
- 7.52 use a calculator to find perimeter, area, circumference, and volume of plane and solid figures (7.35)
- 7.53 use a graphing calculator to locate and plot points and lines on a Cartesian Coordinate Plane using ordered pairs and/or a table of values (7.22)
- 7.54 use graphing software to create graphs frequency distributions, line-plots, and scatter plots (7.28) ◇
- 7.55 use a spreadsheet software to enter and edit data ◇
- 7.56 practice inputting data using correct keying, editing, and formatting techniques ◇
- 7.57 identify work produced by using technology as intellectual property and thus protected copyright laws ◇
- 7.58 discriminate between ethical and unethical access to information ◇
- 7.59 identify technological skills required for various careers ◇

Grade Seven Social Studies: World Geography

The seventh grade program of study includes the five themes of world geography- location, place, movement, human/environment interaction, and regions. The purpose of this program is to present a picture of a crowded world, a physical world more threatened, and global regions more competitive and interconnected, than previously existed. This study will be accomplished through the analysis of the physical and human characteristics of world regions.

Civics

- 7.1 identify the different forms of government in various world regions ◇
- 7.2_{5,8,9,11} compare and contrast individual rights of citizens in a variety of world regions ◇
- 7.3 explain the impact of the United States Constitution's Preamble and Amendments on the formation of various world governments ◇
- 7.4₉ compare and contrast the lawmaking processes of world governments ◇
- 7.5 participate in role playing exercises which demonstrate a knowledge of "trial by jury"
- 7.6₁₁ outline the purposes and functions of major international governmental and non-governmental organizations
- 7.7 compare and contrast the functions and structure of U.S. government to governments of other countries

Economics

- 7.8_{4,10,11} describe the impact of technology on agriculture and industry throughout the world ◇
- 7.9 identify and compare different types of economic systems ◇
- 7.10 analyze how geography influences the economy of a region
- 7.11₉ identify the impact and global effects of a "strike" on an

industry ◇

- 7.12_{3,4,5,6,9} describe the relationship between supply, demand, and the price of a product ◇
- 7.13₁₀ define economic terms (e.g., balanced budget, budget deficit, infrastructure, primary sector, industrial sector) ◇
- 7.14 explain how countries are economically interdependent ◇
- 7.15 identify and classify the different types of world trade organizations
- 7.16₁₀ analyze the operation and the importance of stock markets in the global economy (e.g., New York, London, and Tokyo stock exchanges) ◇
- 7.17 analyze the technological improvements in transportation and communication that have helped create a global society ◇
- 7.18_{4,5,6,9} compare and contrast social services provided by world governments
- 7.19_{3,4,5,6,8,9,10,11} draw conclusions from economic maps, charts, graphs, and timelines ◇

Geography

- 7.20 compare and contrast geographic regions (e.g., physical, cultural, perceptual, economic)
- 7.21 compare the physical, political, cultural, and economic environments of regions
- 7.22 use correct geographic terminology
- 7.23 identify and explain the

- of different map projections and their uses (e.g., aerial photos, globes, charts and graphs, and polar projection) ◇
- 7.24 identify how mental maps (perceptions) affect our judgments about people and places
- 7.25₁₁ draw conclusions about information presented on special purpose maps and be able to differentiate among map types ◇
- 7.26 experiment with the use of directions (e.g., cardinal directions, subordinate directions, latitude, and longitude)
- 7.27₉ identify the seven continents of the world and their associated oceans, seas, rivers, and landforms
- 7.28 identify countries, cities and transportation networks on maps ◇
- 7.29 define the term "culture" and use the term in a geographic context (e.g., isolation, core area, movement)
- 7.30 identify geographic factors and cultural factors that block the movement of ideas and innovations ◇
- 7.31₉ identify the world's climatic regions and the ways in which they influence lifestyle
- 7.32 identify how human processes impact on the world's physical environment (e.g., pollution, clear-cutting, strip mining)
- 7.33 describe the physical and human characteristics in major world regions
- 7.34 analyze interconnections among regions (e.g., goods and services, music, language, and religion) ◇
- 7.35 analyze renewable and nonrenewable resources (e.g., fossil fuels and hydroelectric power) and explain how technology affects the ways in which culture groups perceive and use their resources ◇
- 7.36_{4,9,10} identify emerging agricultural methods used in different regions and compare them to methods used in various early civilizations
- 7.37 compare and contrast the characteristics of demographic structure through population pyramids (e.g., total size, birth rates, age, distribution, and doubling time) ◇
- 7.38 identify and describe the patterns of immigration and their effects on the distribution of cultural patterns in a region (e.g., disease, language, religion, customs, diversity)
- 7.39 explain cooperation and conflict over control of the world's resources ◇
- 7.40 investigate and describe new geographic frontiers such as the oceans, Antarctica, and air space
- 7.41 analyze the growth of tourism and its impact on regional environments and culture ◇
- 7.42 explain the geographic factors in the past and present growth of the world's urban centers ◇
- 7.43 locate major meridians of longitude and parallels of latitude
- 7.44 locate and identify major world rivers, climate areas, and rain forests
- ### History
- 7.45 identify social conditions that have influenced or altered the movement of people throughout the world (e.g., slavery) ◇
- 7.46_{3,6,9} draw conclusions about the effect of the environment on native cultures (e.g., Native Americans, Australian Aborigines, African Berbers)
- 7.47 identify religious and secular celebrations observed around the world
- 7.48_{5,8,9,11} analyze changes which immigration has made on the world's physical, political, and cultural environment
- 7.49₉ compare and contrast the beliefs, religion, and mythology of native cultures throughout the world

- 7.50_{4,6,11} identify the role of racial and ethnic minorities and women in the advancement of civil rights and key figures ◇
- 7.51₁₀ trace the development of early civilizations (e.g., Mesopotamia, Egypt, Greece, China, India, Sparta, Sumeria)
- 7.52 explain what occurs when people from different regions interact ◇
- 7.53_{9,11} describe the role geopolitics played in historic events of the twentieth century (e.g., Cold War, Vietnam, Persian Gulf War)
- 7.54_{3,4,5,6,8,9,10,11} draw world geography/history conclusions from maps, globes, charts, posters, graphs, and timelines ◇

Review for Assessment:

- 7.55 know the role of trial by jury and identify the purpose of the parole system in the United States
- 7.56_{4,5,6,9} using basic economic vocabulary, apply the concept of supply and demand to a specific United States situation ◇
- 7.57₄ identify physical barriers to transportation in the Americas and how people adapted to the barriers (e.g., Appalachia and Rocky Mountains, Isthmus of Panama)
- 7.58₃ explain the relationship between government taxation and the provision of public services

Computer/Technology

- 7.59 use appropriate software to practice and master seventh grade social studies instructional objectives ◇
- 7.60 use a variety of audio-visual and multi-media materials to practice and master seventh grade social studies instructional objectives ◇
- 7.61 practice inputting data using correct keying, editing, and formatting techniques ◇
- 7.62 use graphics software to create graphs, histograms, tables, and charts ◇
- 7.63 use graphics software to select the appropriate type of graph to display a set of data ◇
- 7.64 use a database to sort and search data to solve a specific problem ◇
- 7.65 explain how technology affects the ways in which people use their resources ◇
- 7.66 discriminate between ethical and unethical access to information ◇
- 7.67 identify technological skills required for various careers ◇
- 7.68 use on-line sources to obtain or exchange information ◇

Grade Seven Science

The Coordinated and Thematic Science (CATS) Seven objectives evaluate, interpret, and predict conditions and phenomena of the living and designed worlds. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy in the fields of biology, chemistry, physics, and earth/space sciences. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of the major science themes of systems, changes, and models. Students will engage in active inquires, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated into all activities. CATS Seven reviews motions and forces, ecosystems, diversity of life, energy transformations, plate tectonics, earth's resources, and weather. Major concepts introduced at the seventh grade level include elements, mixtures, and compounds, populations/ecosystems, conservation of matter and energy, and earth's history.

Nature of Science

- 7.1 develop a conceptual framework of scientific principles
- 7.2 recognize the interdependency of science themes and scientific concepts
- 7.3 evaluate the interrelationships of scientific concepts to everyday life by making informed decisions and choices using scientific reasoning and knowledge ◇
- 7.4_{5,6} **investigate career choices in science and technology** ◇
- 7.5_{5,6,8} **apply skepticism, careful methods, logical reasoning, and/or creativity in investigating the observable universe (e.g., uses of natural resources, chemical and physical changes of matter; factors affecting living conditions in space vehicles)**
- 7.6 recognize and appreciate that scientific knowledge is subject to modification as new information challenges current theories
- 7.7 acquire a holistic view of scientific knowledge by integrating reading, writing, mathematics and other disciplines with the science curriculum
- 7.8 use a variety of activities and investigations to produce a sense of wonder about the natural world and the joy of discovery
- 7.9 recognize that the exploration of science is challenging and

fulfilling and establishes patterns of lifelong curiosity and learning

Scientific Attitudes/Habits of Mind

- 7.10 cooperate and collaborate to ask questions, find answers, solve problems and conduct investigations to further an appreciation and joy of scientific discovery ◇
- 7.11 process and integrate experiences with prior knowledge to formulate new ideas
- 7.12 understand that the study of science is a dynamic process and the results are not always definite or complete
- 7.13_{4,5,6,8,9,10,11} **formulate conclusions through close observations, logic, objectivity, perseverance and integrity in data collection (e.g., impact of natural phenomena on the environment, conservation of energy, concepts of chemical composition of living things)** ◇

Scientific Processes/Thinking Skills

- 7.14 recognize and apply facts, concepts, laws, and theories to explain phenomena
- 7.15_{3,4,5,6,8,9,10} **compare and contrast objects, actions or phenomena according to similarities and**

differences in order to classify them (e.g., variations in systems and organisms, characteristics of geological time, models of earth structures)

7.16_{3,4,5,6,8,9,10,11} construct and use charts, graphs, and tables to organize, display, interpret, analyze, and explain data (e.g., extrapolation, interpolation) ◇

7.17_{3,4,5,6,8,9,10,11} use inferential reasoning to make logical conclusions from collected data (e.g., causes and effects) ◇

7.18_{3,4,5,6,8,9,10,11} utilize experimentation to demonstrate scientific processes (e.g., formulating questions, predicting, forming hypotheses, quantifying, identifying dependent and independent variables)

7.19_{3,4,5,6,8,9,10,11} develop rational thinking processes that underlie scientific approaches to problem solving by employing critical-thinking skills in applying scientific knowledge, using imagination and creativity while working individually or cooperatively (e.g., sequencing of components and processes according to order of occurrence, cause and effect of interruptions in a sequence of a system, representations involving sequencing of processes and components of a system) ◇

7.20_{3,4,5,6,8,9,10,11} develop skills in the use of laboratory materials and equipment; and proper communication of scientific data collected (e.g., meter sticks, balances, thermometers, scales, graduated cylinders) ◇

Laboratory Investigations/Hands-On Learning

7.21 engage in active - inquiries,

investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and laboratory skills

7.22 use a variety of materials and scientific instruments to conduct explorations and investigations of the natural world to explain science concepts (e.g., measure environmental conditions using appropriate instruments) ◇

7.23 demonstrate safe techniques for handling, manipulating and caring for science materials, equipment and living organisms ◇

Science Themes and Subject Matter

7.24 develop through the study of interdependent themes including systems, changes, and models an understanding of biological, earth/space, and physical science concepts

7.25 associate hands-on activities to daily life experiences

7.26 express ideas that illustrate the relevance of science, technology, and societal issues

7.27_{9,11} identify and describe disease causing organisms and the diseases they cause (e.g., bacteria, viruses, protozoa, fungi) - *systems*

7.28_{3,4,5,6,8} evaluate how the different adaptations and life cycles of plants and animals help them to survive in different niches and environments (e.g., inherited and acquired adaptations) - *systems*

7.29_{8,9,10,11} explain how human body systems work together (e.g., skeletal, muscular, and integumentary systems) - *systems*

7.30_{3,4,5,6,8,9,10} predict the trends of interdependent populations if one of the limiting factors is changed - *changes*

7.31_{5,8} analyze how changes in the environment have lead to variations in reproductive

- adaptations (e.g., seed dispersal, egg laying, live birth) - *changes*
- 7.32_{6,8,9} evaluate the consequences of the introduction of chemicals into the ecosystem (e.g., environmental consequences, human health risks, mutations) - *changes*
- 7.33_{6,8} analyze the differences in the growth, development and reproduction of plants (e.g., flowering and non-flowering plants) - *changes*
- 7.34 compare the variations in cells, tissues, and organs of the skeletal, muscular, and integumentary systems of different organisms - *changes*
- 7.35_{3,4,5,6} construct simple keys to differentiate among living things of similar characteristics - *models*
- 7.36 construct and manipulate models which show variations in living things (e.g., skeletal, muscular, integumentary systems) - *models*
- 7.37_{5,6} construct models of biologically important substances (e.g., organic and inorganic molecules) - *models*
- 7.38 differentiate among elements, compounds and mixtures - *systems*
- 7.39_{3,4,6,8,10} differentiate mixtures as solutions, colloids or suspensions - *systems*
- 7.40_{3,5,6,8,10,11} evaluate types of solutions by solutes and solvents, relative concentrations, conductivity, pH, and nine types of solutions (e.g., liquid in gas, solid in solid, gas in gas) - *systems*
- 7.41_{9,11} studying chemical reactions involving acids and bases, follow the neutralization process using color indicators and identify the salt formed in the reaction - *changes*
- 7.42_{6,8,9,10,11} describe the behavior of individual particles and verify the conservation of matter while exploring the melting and freezing of pure substances - *changes*
- 7.43_{6,8,9,10,11} trace the energy flow into and out of materials and verify that melting and freezing occurs at the same temperature - *changes*
- 7.44 using pictures showing cyclical processes in nature, trace the water cycle, the nitrogen cycle, and the carbon dioxide cycle - *models*
- 7.45_{6,9,11} write word equations to describe chemical reactions - *models*
- 7.46_{3,6,9} relate characteristics of light and sound to waves (e.g., amplitude, pitch, wavelength, reflection, absorption rate, color) - *systems*
- 7.47 interpret characteristics of AC and DC circuits (e.g., batteries, transformers) - *systems*
- 7.48 experiment with simple machines to demonstrate the relationship between forces and distance - *systems*
- 7.49 explain the effect of gravity on falling objects (e.g., $g = 9.8 \text{ m/s}^2$, object dropped on earth and on moon) - *systems*
- 7.50_{4,5,6,8,9,10,11} relate physical changes to the Kinetic-Molecular Theory (e.g., molecular energy, molecular movement) - *changes*
- 7.51 explain qualitatively conservation of matter (e.g., water cycle, food chain, chemical reactions) - *changes*
- 7.52_{8,9} explain qualitatively conservation of energy (e.g., potential energy to kinetic energy) - *changes*
- 7.53_{8,9} recognize that energy can be changed from one form to another (e.g., electrical to heat, electrical to mechanical, heat to mechanical) - *changes*
- 7.54 use vectors to represent direction of motion - *models*
- 7.55_{5,6,8,9,10} analyze motion graphically - *models*
- 7.56 investigate application of lenses to science (e.g.,

- microscopes, telescopes, magnifying glass, periscopes) - *models*
- 7.57 review fundamental earth science concepts including, motions of sun and moon, weather and topographic maps - *systems*
- 7.58 recognize that stars not only are different in age and size, but also in color, temperature and brightness - *systems*
- 7.59 describe and compare the physical characteristics of celestial objects - *systems*
- 7.60₁₀ depict and relate causes of tides, surfs and currents - *systems*
- 7.61 examine the relationships among air masses, oceans, weather, convection currents and the sun's energy - *systems*
- 7.62 demonstrate how natural phenomena and societal behaviors impact the environment - *systems*
- 7.63 identify and summarize origin of the universe theories - *systems*
- 7.64 understand mans' responsibility to recognize and solve problems involving the environment including solid waste management - *systems*
- 7.65 identify factors affecting living conditions in space - *changes*
- 7.66 compare and contrast geologic time - *changes*
- 7.67_{4,10} construct and explain various models (e.g., motions of earth, sun and moon, ocean floor structures, coastal landforms and soil erosion) - *models*
- 7.68_{3,8,10,11} given a topographical model or map, identify land features (e.g., mountains, rivers, valleys, lakes, glaciers, volcanoes) - *models*

Science History

- 7.69_{5,6} articulate the historical significance of scientific discoveries (e.g., as influenced by technological demands, competition, controversy, world events, personalities,

- societal issues)
- 7.70_{5,6} compare the evolution of science concepts and theories (e.g., cells, plate tectonics, atoms, genetics)
- 7.71_{5,6} examine the contributions of men and women of diverse cultures to the development of science

Science, Technology, and Society

- 7.72_{5,6,8,10,11} give examples of how science and technology are used in daily living ◊
- 7.73_{5,6,8,10,11} use the knowledge of science and technology to make personal decisions at the local and global levels ◊
- 7.74 evaluate and critically analyze mass media reports of scientific developments and events ◊
- 7.75_{5,6,8,10,11} critically analyze the effects and impacts of science and technology on global and local problems (e.g., mining, manufacturing, recycling, farming, water quality)
- 7.76_{5,6,10} explore the connections between science, technology, society, and career opportunities
- 7.77_{5,6,8,10,11} analyze the positive and negative effects of technology on society and the influence of societal pressures on the direction of technological advances

Computer/Technology

- 7.78 use appropriate software, audio-visual, and/or multimedia materials to practice and master seventh grade instructional objectives in science
- 7.79 using the graphing application of appropriate software, select the suitable chart, table, or graph to display data
- 7.80 using the graphing application of appropriate software, create tables, charts, and/or graphs
- 7.81 use a calculator to perform mathematical functions in data

- analysis
- 7.82 use a variety of instruments (i.e. probes, thermometers, measuring devices) to perform measurements and record data
- 7.83 use appropriate software to practice reading, interpreting, analyzing, and evaluating the data on a map, chart, graph, table, and diagram
- 7.84 use appropriate software, practice extrapolating and interpolating information from a graph
- 7.85 use appropriate software to practice drawing conclusions from maps, diagrams, charts, graphs, and tables
- 7.86 use appropriate software to practice making predictions, inferences, and hypothesis from maps, diagrams, charts, graphs, and tables
- 7.87 input data using correct keying, editing, and formatting techniques
- 7.88 use a database to sort and search data to solve a specific problem
- 7.89 demonstrate a knowledge of how technology affects the ways in which people use resources
- 7.90 discriminate between ethical and unethical access to information
- 7.91 associate computer/technology activities with related careers
- 7.92 retrieve current data from a variety of electronic sources which might include the Internet, and/or software reference programs

Grade Eight

English Language Arts

English Language Arts at the eighth grade level is designed to encourage students to develop strategies that deal with language in real life situations. Writing focuses on prewriting, composing, and editing with emphasis on audience and use of technology. Reading comprehension and vocabulary stresses development of reading and thinking skills that enable students to comprehend and react critically to various genre of national, international, and West Virginia works. Language objectives stress mechanics, language expression, and organization of ideas. Study skills emphasize collection and organization to analyze information. The English Language Arts curriculum is designed to prepare students for the workplace.

Listening/Speaking

- 8.1 identify and correct usage errors in oral communications ◇
- 8.2 exhibit proper speaking and listening etiquette (e.g., focusing on speaker, speaking in turn, using various communication technologies, demonstrating interpersonal communications) ◇
- 8.3 use public speaking strategies to prepare formal and informal speaking presentations (e.g., informational demonstrations, persuasive speeches, job interviews) ◇
- 8.4_{5,6,7} listen to oral communication and retell in oral form relating personal experiences and constructing new meaning ◇
- 8.5_{1,2,3,5,6,7} understand multi-step oral instructions and complete task ◇
- 8.6_{2,4,5,6,7} listen to specific information and construct meaning beyond the text (e.g., character's feeling) ◇
- 8.7_{2,4,5,6,7} listen to specific information and sequence in proper order ◇
- 8.8_{2,4,5,6,7} listen to specific information to make predictions ◇
- 8.9_{2,4,5,6,7} listen to specific information to locate main idea ◇
- 8.10_{2,4,5,6,7} listen to specific information; identify word meaning from context ◇
- 8.11_{2,4,5,6,7} listen to information to

identify purpose of writing ◇

- 8.12_{2,3,4,5,6,7} use critical thinking to distinguish fact from opinion; form personal opinions; make predictions and analyze outcomes ◇
- 8.13_{5,6,7} identify synonym of unknown words by using context clues in sentences read aloud ◇
- 8.14_{1,2,5,6,7} think critically about a selection to lead to exploration, questioning, and imagining about a selection read orally ◇

Reading Comprehension

- 8.15_{1,2,3,4,5,6,7,9,10,11} read literary works by national and international authors to include but not limited to: short stories, science fiction, contemporary fiction, historical fiction, biographies, narratives, poetry, and West Virginia authors ◇
- 8.16_{k,2,4,5,6,9,10,11} determine the main idea of a passage ◇
- 8.17_{2,3,5,9,10,11} determine author's purpose by analyzing information on style of writing ◇
- 8.18_{3,4,5,6,7,9,10,11} locate specific details in a textbook passage to promote initial understanding ◇
- 8.19_{5,9,10} use graphic organizers to construct meaning of a textbook passage showing

- important ideas and the relationship among those ideas ◇
- 8.20_{k,3,4,5,6,7,9,11} draw a conclusion to describe characters based on their thoughts and actions ◇
- 8.21_{6,9,10,11} justify conclusions or opinions reached from textbook information ◇
- 8.22_{6,9,11} identify and apply comprehension strategies through the critical thinking of summarizing interpreting, evaluating, critiquing, and analyzing what is read ◇
- 8.23_{10,11} infer meaning of a phrase used in context ◇
- 8.24_{2,3,4,9,10} determine the sequence of events in a text to determine initial understanding ◇
- 8.25_{1,2,3,4,5,6,7,9,10} use setting, plot, characterization and style to determine a text's genre (e.g., science fiction, folktale)
- 8.26_{5,6,9,10,11} locate information in recreational reading to promote initial understanding
- 8.27_{4,6,7,10} distinguish factual from opinion statements ◇
- 8.28_{7,9,10,11} determine the meaning of persuasive language and propaganda to determine meaning of information in functional text (e.g., advertisement) ◇
- 8.29_{3,4,6,7,9,10,11} make inferences from functional text to make analysis of information (e.g., advertisements) ◇
- 8.30_{6,7,9,10,11} draw conclusions from functional materials to make analysis of information (e.g., advertisements) ◇
- 8.31_{3,5,6,7,9,10,11} locate specific details in ads and other functional material to verify initial understanding
- 8.32_{6,7,9,10,11} predict the action of a reader of persuasive writing
- 8.33 determine types of conflict in a short story (e.g., man vs. man, man vs. society, man vs. nature, man vs. self) ◇

- 8.34 identify literary techniques used in literature (e.g., irony, understatement, exaggeration, foreshadowing, etc.)
- 8.35 identify the elements of plot in a short story (exposition setting, complications, suspense, climax, and resolution)
- 8.36 identify types of poetry found in literature (e.g., narrative poem, ballad, lyric poem)
- 8.37 identify figures of speech used by author's in selected pieces of literature (e.g., simile, metaphor, allusion, and personification)

Reading Vocabulary

- 8.38_{k,2,3,4,5,6,7,9,10,11} determine the meaning of words from their use in context ◇
- 8.39_{2,3,4,5,7,9,10,11} determine the definition of multiple meaning words used in context ◇
- 8.40_{2,3,4,5,6,7,9,10,11} determine the synonym for words in text to improve quality (e.g., precise verbs, descriptive modifiers) ◇
- 8.41 make use of classifications to determine possible use of words
- 8.42 use analogy to determine relationship of new and familiar words ◇
- 8.43 examine connotation of words as used in selection and other possible uses ◇
- 8.44 identify root words and add prefixes and suffixes to change meaning ◇
- 8.45 identify synonyms and antonyms of selected words ◇
- 8.46 identify idioms and their use in passages ◇
- 8.47 identify homophones and homographs and determine their meaning in a selection ◇

Writing

- 8.48 use prewriting and drafting strategies to generate topics and plan approaches to writing tasks
- 8.49 use writing strategies to address specific writing purposes, (e.g., narrative, descriptive, informative,

- and persuasive) in paragraphs or compositions ◇
- 8.50 use writing strategies to write for audiences, including peers, teachers, and employers ◇
- 8.51 use revision and editing strategies to delete or correct errors in organization, and content ◇
- 8.52_{4,7,10} use a writing prompt to develop a composition that contains a beginning, middle and end
- 8.53_{4,7,10} develop a composition that is focused, coherent, and has a clear and logical progression of ideas
- 8.54_{4,7,10} develop a composition that contains smooth transition
- 8.55_{4,7,10} use a writing prompt to develop a composition that addresses the assigned topic
- 8.56_{4,7,10} use a writing prompt to develop a composition that is complete, varied, and economical
- 8.57_{4,7,10} use a writing prompt to develop a composition whose word choice is vivid, precise, and economical
- 8.58_{4,7,10} use editing strategies to correct errors in usage, capitalization, punctuation, and spelling
- 8.59 demonstrate mastery of penmanship and keyboard in the writing process ◇
- 8.60 incorporate examples of specific parts of speech, phrases, and clauses in the writing process ◇
- 8.61 use and identify different types of sentences, paragraphs, and essays ◇
- 8.62 demonstrate the use of personal writing for pleasure and enjoyment (e.g., journals, friendly letters) ◇
- 8.63 make use of functional types of writing (e.g., book reports, friendly letters, essay questions, and outlining) ◇
- 8.64 use electronic and traditional editing strategies (e.g., symbols, dictionaries) to correct spelling errors in computer generated work (e.g., proper names, homophone, [in, inn].) ◇

Spelling

- 8.65 identify and spell common homophones/homonyms (words that have different spellings an meaning but one pronounced the same (e.g., stake and steak) ◇
- 8.66 use generalization to spell words containing "c" sounded as "k" (e.g., candle) ◇
- 8.67 spell words containing "oi" and "oy" (e.g., soil, boy) ◇
- 8.68 use visual cues as a strategy to spell words containing the sound "sh" (e.g., partial, special, dish) ◇
- 8.69 form plurals of words ending with "sh" (e.g., wish, wishes) ◇
- 8.70 spell words containing "y" sounded as "i" (e.g., my) and comparative forms ending in "y" (e.g., busy, busier, busiest) ◇
- 8.71 use meaning as a strategy for spelling prefixes "bi", "re", and "mis" (e.g., bilateral, reread, misunderstand) ◇
- 8.72 spell words with suffix "tive" (e.g., protective) ◇
- 8.73 form inflectional endings on words ending in "e" (e.g., participate, participation) ◇
- 8.74 form correct spelling of word when adding common endings (e.g., s, es) ◇
- 8.75 develop spelling competency by recognizing one's own spelling weakness ◇
- 8.76 use syllabication as a strategy for spelling words ◇
- 8.77 use visual and pronunciation cues as strategies for spelling (e.g., dessert, desert) ◇
- 8.78 distinguish between misuse and proper spelling of a contraction and possessive ◇
- 8.79 focus on problem words that are commonly misspelled ◇
- 8.80 use memorization and/or mnemonic strategies to help spell problem parts of words (e.g., Tell these mosquitoes to quit biting

me) ◇

- 8.81 acquire a written vocabulary from a wide variety of instructional sources and activities in written communication across the curriculum ◇

- 8.82 use electronic editing tools as well as traditional editing resources to correct spelling errors (e.g., electronic spell checker, dictionary, thesaurus) ◇

Language

- 8.83^{1,2,3,4,5,6,7,9,10,11} **capitalize titles of people** (e.g., President Jefferson) ◇
- 8.84^{6,7,9,10,11} **capitalize geographic names and directions that are used to name a region** (e.g., The West has many very large states.) ◇
- 8.85^{6,7,10,11} **capitalize proper adjectives** (e.g., German steel) ◇
- 8.86 **capitalize brand names, organizations, business firms, institutions, and government bodies** ◇
- 8.87 **capitalize historical events and periods, special events, and calendar events** ◇
- 8.88 **capitalize nationalities, races, religions, academic courses, and languages** ◇
- 8.89 **capitalize particular places, things, events, and awards** ◇
- 8.90^{7,9,10,11} **use a comma with an introductory phrase** ◇
- 8.91^{4,6,7} **use commas with a conjunction between independent clauses** (e.g., We had lunch on the bus, and it was fun.) ◇
- 8.92^{5,7,9,10,11} **use commas with appositives** ◇
- 8.93^{4,9} **use commas with conjunctions in compound sentences** ◇
- 8.94 **use commas to separate items in a series** ◇
- 8.95 **use comma to separate two or more adjectives preceding a noun** ◇
- 8.96 **use comma to set off**

nonessential clauses and nonessential participial phrases ◇

- 8.97 **use commas to set off sentence interrupters** (e.g., appositives, nonessential phrases and clauses) ◇
- 8.98 **use commas in certain situations** (e.g., dates and addresses, parts of letters, abbreviations after names) ◇
- 8.99^{7,9,10,11} **use a semicolon between independent clauses** ◇
- 8.100 **use a semicolon between items in a series if the items contain commas** ◇
- 8.101^{5,6,10,11} **use a colon to introduce a list of items** ◇
- 8.102 **use a colon after the salutation of a business letter** ◇
- 8.103 **use a colon between numerals that represent hours and minutes and between chapter and verse in a biblical reference** ◇
- 8.104 **use correctly hyphens, dashes, and parentheses in written expression** ◇
- 8.105 **use quotation mark correctly when punctuating titles and dialogue** ◇
- 8.106 **identify parts of a sentence** (e.g., subject, verb, and complement) ◇
- 8.107^{7,9,10,11} **use correct pronoun antecedent in sentences** ◇
- 8.108 **use correct pronoun case in written expression** (e.g., nominative, objective, possessive) ◇
- 8.109 **use the different types of pronouns correctly in written expression** (e.g., personal, demonstrative, interrogative, compound personal, indefinite, and relative) ◇
- 8.110^{7,9} **use the correct subject verb agreement with a compound subject** ◇
- 8.111⁶ **differentiate the use of adjectives and adverbs** ◇
- 8.112⁶ **use adverbs correctly in written expression** ◇
- 8.113^{1,2,4,6,10,11} **write and edit text using**

- correct present tense ◇
- 8.114 write and edit text using correct past tense ◇
- 8.115 write and edit text using correct future tense ◇
- 8.116_{7,9,10,11} identify appropriate use of descriptive language in written expression ◇
- 8.117_{7,10,11} identify and correct misplaced modifiers ◇
- 8.118_{1,2,3,4,5,6,7,9,10,11} identify and correct awkward sentence construction ◇
- 8.119_{3,4,5,7,9,10,11} identify and correct run-on sentences ◇
- 8.120_{5,6,7,9,10,11} identify and correct redundancy ◇
- 8.121_{5,10,11} identify and correct faulty parallel sentence structure ◇
- 8.122_{6,7,9} identify and correct faulty subordination (e.g., I like hamburgers since I want candy.) ◇
- 8.123 identify and punctuate complex sentences ◇
- 8.124_{7,9,10,11} identify and use appropriate transitions in writings ◇
- 8.25_{1,2,4,5,6,7,9,10,11} make decisions about relevant and appropriate content to eliminate extraneous sentences in writing ◇
- 8.126_{3,4,6} organize information by combining sentences ◇
- 8.127_{1,2,3,4,5,6,7,9,10,11} identify the purpose and audience in written expression ◇
- 8.128 identify thesis statements in written expression ◇
- 8.129_{1,2,3,5,6,7,10,11} identify supporting sentences in written expression ◇

Study Skills

- 8.130_{4,9} demonstrate appropriate use of parts of a book such as title page, introduction, table of contents, appendix and references
- 8.131_{9,10,11} use the card catalog or on-

line catalog systems to determine a book's call number, author, publisher, publisher and artist, (an artist is an illustrator) ◇

- 8.132_{3,4,5,6,7} use a pronunciation guide to determine numbers of syllables in a word, and sounds of letters as they appear in individual words
- 8.133_{5,6,7,9,10,11} use dictionary entries to select the best meaning for a multi-meaning word when used in context
- 8.134_{4,9,10} demonstrate appropriate use of a contents page to locate which chapter specific information can be found ◇
- 8.135_{4,9,10} use table of contents and index to locate information ◇
- 8.136 given chapter names in an informational book, predict the type of book
- 8.137_{4,10,11} construct and read a graphic organizer for a written report for a content area
- 8.138_{3,4} identify a main heading from a list of topics in order to organize a report (e.g., food, needs, clothing, and shelter) ◇
- 8.13 use study skills of scanning, skimming, and reading for mastery to prepare for a test
- 8.140 develop strategies for effective reading prior to a test (e.g., scanning, skimming, finding main idea, and paraphrasing)
- 8.141 organize information to classify, compare and contrast, and make analogies to answer questions on a test
- 8.142 evaluate resources by gathering and evaluating evidence to make appropriate conclusions about information
- 8.143 develop skills in outlining main points, summarizing, and noting important examples to evaluate information ◇
- 8.144 use available technologies to gather information (e.g., thesaurus, and other software programs) ◇

Computer/Technology

- 8.145 use appropriate software to practice and master eighth grade English language arts instructional objectives
- 8.146 convert a word processing document into a simple desktop publishing document
- 8.147 using a word processor, demonstrate correct keying, editing, and formatting techniques (8.51)
- 8.148 distinguish between private and public data/information
- 8.149 identify technological skills required for various communication careers
- 8.150 use a word processing program to copy and move text (8.51)
- 8.151 use the editing functions of a

word processor (spell check, grammar checker, thesaurus, outliner) (8.58, 8.64 and 8.82)

- 8.152 use a word processing program to produce a report that contains centering, tabs, and more than one paragraph (8.51)
- 8.153 develop keyboarding skills: posture, finger placement, keying letters, numbers, symbols, and special keys (8.59)
- 8.154 use graphic software to create, read, interpret and organize information in the form of tables, graphs, diagrams and charts
- 8.155 select and use appropriate software and/or other technologies to locate and use reference sources (8.144)

Grade Eight Mathematics

Pre-Geometry with Algebra

Replaces 8th Grade General Mathematics

Pre-Geometry with Algebra provides an alternative course for students who do not elect to take Algebra I in the eighth grade or who have not successfully mastered the new skills from *Pre-Algebra with Geometry* in the seventh grade. In addition to reinforcing the concepts presented in *Pre-Algebra with Geometry*, this course extends problem solving to a more sophisticated level. Students will continue to apply integer operations, properties, expressions, and equations so as to reinforce these concepts in varied applications. Lessons involving cooperative learning, manipulatives, or technology will strengthen students' understanding of concepts while fostering communication and reasoning skills. Calculator use is emphasized for all mathematical tasks including assessment.

Number Theory and Number Sense

- 8.1_{9,10,11} compare and order rational and irrational numbers using Venn Diagrams, number lines, symbols (<,>=), manipulatives, calculators, computer, and definitions
- 8.2 describe the properties of terminating, repeating, and non-repeating decimals and convert between fractions, mixed numbers, and decimals mentally, with paper/pencil, or a calculator
- 8.3 extend scientific notation to

numbers with a wide range of values using a calculator when appropriate ♦

- 8.4₇ find powers, squares, and square roots
- 8.5₇ distinguish between prime and composite numbers
- 8.6_{6,7} identify pictorial representations of decimals
- 8.7_{5,6,7} identify the place value of a digit in a decimal

Computation and Estimation

- 8.8 solve consumer application problems including tips, discounts, sales tax, and

- simple interest using mental math, paper/pencil, or calculator ◇
- 8.9_{6,7,9,10,11} solve ratio and proportion problems including rates, scale drawings, similar polygons, and estimating populations ◇
- 8.10_{5,6,7} use estimation techniques (front-end, rounding, clustering, and compatible numbers) with whole numbers, decimals, money, percent, fractions, and mixed numbers to solve or to verify solutions in application problems
- 8.11_{5,6,7} add, subtract, multiply, or divide fractions, mixed numbers, and integers resulting from problem situations using mental math, paper/pencil, and calculators
- 8.12 develop computational strategies based on the commutative, associative, and identity properties with emphasis on the inverse and distributive properties
- 8.13_{9,10,11} solve traditional and non-routine problems, which may include missing information, using appropriate tools ◇

Patterns, Functions, and Algebra

- 8.14_{9,10,11} use order of operations and exponent rules to evaluate and simplify numerical and algebraic expressions containing whole numbers, integers, absolute value, fractions, or exponents ◇
- 8.15_{9,10,11} solve one and two step linear equations and inequalities with integer, fraction and decimal solutions, graphing solutions when appropriate ◇
- 8.16_{9,10,11} analyze problems by identifying relationships, discriminating relevant from irrelevant information,

- sequencing, observing patterns, prioritizing, and questioning ◇
- 8.17_{9,10,11} identify algebraic equations and expressions equivalent to a problem expressed in words ◇
- 8.18_{9,10,11} solve problems using appropriate methods such as equations, formulas, expressions, charts or drawings ◇
- 8.19_{9,10,11} apply inductive reasoning to write a rule from data in a function table ◇
- 8.20 disprove mathematical conjectures by using counter-examples
- 8.21_{9,10,11} plot lines within the Cartesian Coordinate Plane using ordered pairs and table of values
- 8.22_{5,6,7} use input/output models for functions (number machines)
- 8.23_{k,1,2,3,4,5,6,7} find missing elements in numeric patterns

Probability and Statistics

- 8.24_{5,6,7,9,10,11} use combinations and permutations in application problems ◇
- 8.25 investigate and describe the difference between the probability of an event found through simulation or experiment versus the theoretical probability of the same event
- 8.26_{9,10,11} extrapolate information from multiple-bar graphs, stem-and-leaf plots, histograms, scattergrams, tables, and frequency distributions (tally charts) ◇
- 8.27_{1,2,3,4,5,6,7} analyze problem situations, such as games of chance or consumer applications, and use a statistical sampling to make predictions ◇
- 8.28_{5,6,7,9,10,11} determine measures of central tendency (mean, median, mode, range), and dispersion from data, graphs, tables, and experiments ◇
- 8.29 investigate and recognize

information ◇

- 8.30_{9,10,11} draw inferences and construct convincing arguments based on data analysis ◇

Geometry with Measurement

- 8.31 calculate area and circumference of circles using radius and diameter
- 8.32_{7,9,10,11} use the concept of volume for prisms/cylinders as the product of the area of the base and the height
- 8.33 use the concept of volume for cone/pyramids as one-third the product of the base and the height
- 8.34_{9,10,11} find angle measures; estimate and solve application problems involving perimeter, area, surface area, and volume of plane and solid geometric figures ◇
- 8.35_{9,10,11} solve problems involving missing measurements in plane and solid geometric figures using formulas and drawings including irregular figures, models, or definitions
- 8.36_{9,10,11} solve right triangle problems using the Pythagorean Theorem, indirect measurement, and definitions
- 8.37 discover and verify the value of π using measurement of physical models
- 8.38 create geometric patterns including tiling, art design, tessellations or scaling using transformations (rotations, reflections, and translations)
- 8.39 construct segments, angles, perpendicular bisectors, and angle bisectors
- 8.40 draw two and three-dimensional figures as a means to solve problems
- 8.41 graph similar figures, reflections, translations, linear equations, and linear equalities on a coordinate plane ◇
- 8.42 identify parallel and perpendicular lines -
- 8.43_{9,10,11} investigate the

relationship between angles when parallel lines are cut by a transversal using models, pencil/paper, or graphing calculator

- 8.44_{5,6,7,9,10,11} measure in both the customary and metric systems; convert units within the same system
- 8.45 classify polyhedrons by components (faces and edges)

Computer and Technology

- 8.46 use appropriate software to practice and master eighth grade instructional objectives in mathematics
- 8.47 use a calculator to compare rational and irrational numbers (8.1)
- 8.48 use a calculator to convert between fractions, mixed numbers, and decimals (8.2)
- 8.49 use a calculator to solve consumer application problems (8.4)
- 8.50 use a calculator to solve problems with fractions, mixed numbers, and integers resulting from problem situations (8.7)
- 8.51 use a calculator to determine measures of central tendency, range, and dispersion from data, graphs, tables, and experiments. (8.22)
- 8.52 use a calculator to find area and circumference of a circle. (8.25)
- 8.53 use a scientific calculator to extend scientific notation to numbers with a wide range of values (8.3)
- 8.54 use a graphing calculator to solve one and two step linear equations and inequalities with integers, fractions and decimals (8.11)
- 8.55 use a graphing calculator to plot lines within the Cartesian Coordinate Plane using ordered pairs or tables of values (8.17)
- 8.56 use a graphing calculator to investigate the relationships between angles formed when parallel lines are cut by a transversal (8.36)
- 8.57 use a spreadsheet and/or

- database to sort and search data, set up formulas, create graphs and charts, and analyze data ◇
- 8.58 practice inputting data using correct keying, editing, and formatting techniques ◇
- 8.59 distinguish between private and public data/information ◇
- 8.60 identify technological skills required for various mathematical careers ◇

Grade Eight Social Studies: West Virginia Studies

The eighth grade program of study consists of a comprehensive course on West Virginia, from the Pre-Columbian period to present day. Special emphasis is placed on the interdependence of geographic, cultural, political, environmental, and economic factors involved in the history of the state.

Civics

- 8.1₉ identify major responsibilities and powers of the United States, West Virginia, and local governments as specified by the United States and West Virginia Constitutions
- 8.2_{3,4,5,6,7,9,10,11} analyze the shared powers and responsibilities of the executive, legislative and judicial branches of United States and West Virginia state government and how the system of checks and balances limits those powers ◇
- 8.3_{3,5,6} identify the duties and requirements for office of elected officials and representatives at the national, state and local levels (e.g., President, Governors, S e n a t o r s , Representatives/Delegates, Members of Board of Public Works, County Commission)
- 8.4_{6,9,10} identify fundamental American principles by using primary source documents and significant political speeches and writings
- 8.5 identify major sources and uses of revenue for state and local governments (e.g., property tax, income tax, fees and licenses, excise tax, levies) ◇
- 8.6 identify the major purposes and provisions of the West Virginia Constitution and the processes by which it can be changed ◇
- 8.7 describe the components of the lawmaking process
- 8.8_{3,5,10} identify types of laws which are made at the national, state, and/or local levels
- 8.9 analyze the functions and jurisdictions of the federal, state, local, and juvenile courts (e.g., United States Supreme Court, State Supreme Court, Circuit Courts, Magistrate Courts, specialized courts)
- 8.10₆ identify individual rights protected by the United States and West Virginia Constitutions and laws ◇
- 8.11 identify various types of elections in West Virginia (e.g., primary/general, state/local, partisan/non-partisans)
- 8.12 trace the evolution of suffrage from colonial America to the present and relate to West Virginia
- 8.13 describe how citizens can participate in government at the local, state, and national levels (e.g., voting, community service, letter writing), and benefit the individual and community ◇

- 8.14 research and describe how special interest groups influence government and the law-making process in West Virginia ◇
- 8.15 evaluate information from various sources (e.g., newspapers, advertisements, cartoons, editorials) and make choices on public issues and candidates for political office in West Virginia ◇

Economics

- 8.16 determine the factors that caused West Virginia to become a leader in the production of salt, coal, and electricity
- 8.17 identify industries and products (e.g., tourism, coal, glass, recreation, agriculture) that are important to the economy of the four regions of West Virginia ◇
- 8.18 describe how West Virginia's economic condition affects social conditions (e.g., employment, in/out migration) ◇
- 8.19 analyze the changes in West Virginia's economy and people due to industrial development ◇
- 8.20 define and explain the importance of West Virginia's renewable and non-renewable resources and how absentee ownership of these impact the state's economy ◇
- 8.21 identify the labor/management strategies that have affected West Virginia's economy (e.g., strikes, boycotts, yellow-dog contracts) ◇
- 8.22₁₀ analyze the effects of national and state governmental actions on West Virginia's economy ◇
- 8.23_{3,10} use a graph to draw conclusions about how national spending affects West Virginia ◇
- 8.24 analyze the importance of banking in West Virginia's economy (e.g., - savings, interest, loans) ◇

- 8.25 explain the benefits of trade to West Virginia's economy ◇
- 8.26_{6,11} examine the effect of technological changes on West Virginia's economy (e.g., in employment, agriculture, tourism, education, industry) ◇
- 8.27 examine economic reasons for the deterioration of some "downtown" areas in twentieth century West Virginia and the renaissance of others ◇

Geography

- 8.28_{4,5,6} describe West Virginia's location in relationship to the Prime Meridian, Equator, Tropic of Cancer, Tropic of Capricorn, Arctic and Antarctic Circles
- 8.29 identify West Virginia's location by longitude and latitude including degrees, minutes, and seconds
- 8.30 identify West Virginia's man-made and natural borders
- 8.31 identify the location of West Virginia in relationship to neighboring states and the eastern United States
- 8.32 use a map to identify the four major geographic regions, major rivers, landforms, and points of interest in West Virginia ◇
- 8.33_{3,4,5,9} draw conclusions about climate, landforms, and resources in West Virginia's four geographic regions using special purpose maps ◇
- 8.34 identify West Virginia's geographic regions through reading descriptive literature ◇
- 8.35 use a map to identify the counties and major cities in West Virginia
- 8.36₅ describe West Virginia's climate and its effect on people's lives
- 8.37₁₁ use a map to explain the settlement, exploration, and population patterns of West

Virginia in relation to geographic features ◇

- 8.38 cite reasons for the development of the West Virginia transportation system ◇
- 8.39_{4,5,9,10,11} identify the geographic factors which lead to development of agriculture, coal, glass, chemical, metallurgical and tourism industries in West Virginia ◇
- 8.40_{4,5,9,10,11} explain how the cultural and economic isolation of different areas of the United States and West Virginia has been changed through technological advances (e.g., TV, radio, telephone, computers, highways) ◇

History

- 8.41 identify characteristics of various Native American cultures in West Virginia from the pre-Columbian period to the arrival of Europeans
- 8.42 list reasons for exploration, major explorers, their routes, and discoveries on the western Virginia frontier
- 8.43 compare and contrast French and English explorers, settlers, and settlements on the western Virginia frontier
- 8.44_{5,6} sequence the events and incentives for Virginia's expansion west to the Ohio River
- 8.45 describe the European-Native American cultural conflict as it relates to West Virginia
- 8.46 explain reasons for and resulting consequences of conflicts and wars as they pertain to the development of West Virginia (e.g., French and Indian War, American Revolution, Civil War) ◇
- 8.47_{7,9} explain the effect of immigration on West Virginia's and America's culture from European settlement through the early twentieth century
- 8.48 explain the conflicts between eastern and western Virginia and

sequence the events that led to the formation of the state of West Virginia

- 8.49_{5,6} identify men and women in West Virginia who have made significant contributions to our history in the public and/or private sectors (statehood movement, Abolition movement, education, industry, literature) ◇
- 8.50_{4,6,10} match representative quotes about historical events in West Virginia and United States to the person who most likely held that view
- 8.51₃ identify the types of transportation which facilitated the growth of West Virginia and western expansion ◇
- 8.52 trace the evolution of the labor movement in West Virginia and the United States ◇
- 8.53 identify the role of ethnic and racial minorities and women in West Virginia's history through contemporary society
- 8.54_{4,11} sequence and analyze the impact of contemporary social, economic, and technological developments on West Virginia's and the United States' people and culture ◇
- 8.55₁₁ draw conclusions about West Virginia and other areas from various types of charts, graphs, maps, pictures, models, and timelines ◇

Review for Assessment:

- 8.56 describe problems faced by Washington upon becoming the first United States President
- 8.57_{3,4,5,6,7,9,10,11} explain the law of supply and demand ◇
- 8.58 describe the unique contributions and characteristics of Arab/Islamic society throughout history

Computer/Technology

- 8.59 use appropriate software to

- practice and master eighth grade social studies instructional objectives ◇
- 8.60 use a variety of audio-visual and multi-media materials to practice and master eighth grade social studies instructional objectives ◇
- 8.61 practice inputting data using correct keying, editing, and formatting techniques ◇
- 8.62 use graphics software to create graphs, histograms, tables, and charts ◇
- 8.63 read, interpret, and draw conclusions from graphs, charts, and tables ◇
- 8.64 use a database to sort and search data to solve a specific problem ◇
- 8.65 distinguish between private and public data/information ◇
- 8.66 identify various careers in the field of technology ◇
- 8.67 discriminate between legal and illegal use of electronic information (including material that is protected by copyright) ◇
- 8.68 examine the effect of technological changes on West Virginia's economy (employment, agriculture, tourism, education, industry, etc.) ◇
- 8.69 examine the effect of technological changes on West Virginia's culture (e.g., television, radio, telephone, computers, the Internet) ◇
- 8.70 use on-line sources to obtain or exchange information ◇
- 8.71 sequence technological developments (e.g., printing press, television, radio, and computer)

Grade Eight Science

The Coordinated and Thematic Science (CATS) Eight objectives analyze, quantify, and explain conditions and phenomena of the living and designed worlds. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy in the fields of biology, chemistry, physics, and earth/space sciences. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of the major science themes of systems, changes and models. Students will engage in active inquires, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated into all activities. CATS Eight reviews elements, mixtures, and compounds, populations/ecosystems, conservation of matter and energy, and earth's history. Major concepts introduced at the eighth grade level include reproduction, genetics, behavior, chemical reactions, and environmental concerns.

Nature of Science

- 8.1 develop a conceptual framework of scientific principles
- 8.2 recognize the interdependency of science themes and scientific concepts
- 8.3 evaluate the interrelationships of scientific concepts to everyday life by making informed decisions and choices using scientific reasoning and knowledge ◇
- 8.4_{5,6,7} investigate career choices in science and technology ◇
- 8.5_{5,6,7} apply skepticism, careful methods, logical reasoning, and/or creativity in investigating the observable universe (e.g., effect of human existence on the biosphere, fundamentals of genetics, sampling techniques involved in data collection)
- 8.6 recognize and appreciate that scientific knowledge is subject to modification as new information challenges current theories

- 8.7 acquire a holistic view of scientific knowledge by integrating reading, writing, mathematics and other disciplines with the science curriculum
- 8.8 use a variety of activities and investigations to produce a sense of wonder about the natural world and the joy of discovery
- 8.9 recognize that the exploration of science is challenging and fulfilling and establishes patterns of lifelong curiosity and learning

Scientific Attitudes/Habits of Mind

- 8.10 cooperate and collaborate to ask questions, find answers, solve problems and conduct investigations to further an appreciation and joy of scientific discovery ◊
- 8.11 process and integrate experiences with prior knowledge to formulate new ideas
- 8.12 understand the study of science is a dynamic process and the results are not always definite or complete
- 8.13_{4,5,6,7,9,10,11} formulate conclusions through close observations, logic, objectivity, perseverance and integrity in data collection (e.g., Newton's Laws of Motion, forces causing the construction and destruction of topographical features, how to illustrate the path of waves traveling through different media) ◊

Scientific Processes/Thinking Skills

- 8.14 recognize and apply facts, concepts, laws, and theories to explain phenomena
- 8.15_{3,4,5,6,7,9,10} compare and contrast objects, actions or phenomena according to similarities and differences in order to classify them (e.g., refraction and reflection of light, how waves travel through different materials, how to represent

forces as vectors)

- 8.16_{3,4,5,6,7,9,10,11} construct and use charts, graphs, and tables to organize, display, interpret, analyze, and explain data (e.g., extrapolation, interpolation) ◊
- 8.17_{3,4,5,6,7,9,10,11} use inferential reasoning to make logical conclusions from collected data (e.g., causes and effects) ◊
- 8.18_{3,4,5,6,7,9,10,11} utilize experimentation to demonstrate scientific processes (e.g., formulating questions, predicting, forming hypotheses, quantifying, identifying dependent and independent variables)
- 8.19_{3,4,5,6,7,9,10,11} develop rational thinking processes that underlie scientific approaches to problem solving by employing critical-thinking skills in applying scientific knowledge, using imagination and creativity while working individually or cooperatively (e.g., properties of substances and environmental impact, adaptations of organisms to their habitat, methods of classifying common organisms by observable characteristics) ◊
- 8.20_{3,4,5,6,7,9,10,11} develop skills in the use of laboratory materials and equipment; and proper communication of scientific data collected (e.g., meter sticks, balances, thermometers, scales, graduated cylinders) ◊

Laboratory Investigations/Hands-On Learning

- 8.21 engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and laboratory skills
- 8.22 use a variety of materials and scientific instruments to conduct explorations and investigations of

- the natural world to explain science concepts (e.g., measure environmental conditions using appropriate instruments) ◇
- 8.23 demonstrate safe techniques for handling, manipulating and caring for science materials, equipment and living organisms ◇

Science Themes and Subject Matter

- 8.24 develop through the study of interdependent themes including systems, changes, and models an understanding of biological, earth/space, and physical science concepts
- 8.25 associate hands-on activities to daily life experiences
- 8.26 express ideas that illustrate the relevance of science, technology, and societal issues
- 8.27 summarize problems related to water on earth as a life sustaining substance (e.g., quality and quantity of surface and ground water)
- 8.28₁₀ identify and explain the structures and functions of cell organelles (e.g., mitochondria, cell membrane, nucleus) - *systems*
- 8.29₁₀ discuss the interdependencies within and among organelles, cells, tissues, organs, and systems - *systems*
- 8.30_{7,9,10,11} explain how human body systems work together (e.g., circulatory, respiratory, reproductive systems) - *systems*
- 8.31_{3,4,5,6,7,9,10} analyze how structures, functions and behaviors of organisms lead to species continuity (e.g., reproductive/mating behaviors, seed dispersal) - *systems*
- 8.32_{3,4,5,6} group unknown organisms into correct taxonomy based on observable characteristics (e.g., use dichotomous keys) - *systems*
- 8.33_{7,9,10,11} compare the variations in cells, tissues, and organs of the circulatory, respiratory, and reproductive systems of different organisms - *changes*
- 8.34_{4,5,6,9,10,11} design an environment in which the chemical and energy needs for the growth, reproduction and development of plants are met (e.g., food pyramids, decomposition) - *models*
- 8.35_{4,6,10,11} demonstrate how living cells obtain the essentials of life (e.g., transpiration, respiration, photosynthesis) - *models*
- 8.36_{9,11} demonstrate the basic principles of genetics (e.g., Mendel's laws, DNA, monohybrid crosses, production of sperm and egg, production of body cells, genes, chromosomes, inherited traits) - *models*
- 8.37 construct and manipulate models which show variations in living things (e.g., circulatory, respiratory, reproductive systems) - *models*
- 8.38_{9,10,11} classify chemical reactions as endothermic and exothermic - *systems*
- 8.39₁₁ identify elements as metallic, non-metallic or metalloid and locate them on the periodic table - *systems*
- 8.40₁₁ assign each element to its chemical family on the periodic table and note similarities in outer energy, level electrons within each family - *systems*
- 8.41_{3,6,10,11} utilize properties of acidity, conductivity, and solubility to classify substances - *systems*
- 8.42_{6,9,11} classify chemical reactions as synthesis, decomposition, single replacement or double replacement and identify the oxidation reactions (e.g., elements or compounds combining with oxygen) - *systems*
- 8.43_{9,10,11} identify acid-base reactions and verify that matter is conserved in chemical reactions - *systems*
- 8.44_{6,7,9,10,11,12} identify chemical reaction factors that might affect the reaction rates including

- catalysts, temperature changes, light energies, and particle size - changes**
- 8.45₁₀ evaluate gaseous systems noting the variation in diffusion rates - **changes**
- 8.46_{6,7,9,10,11} **examine the behavior of gases at different temperature and pressures - changes**
- 8.47₁₀ draw Bohr's Model for each element identifying protons, neutrons, and electrons for each element - **models**
- 8.48₁₁ **write word equations for chemical reaction - models**
- 8.49_{4,5,6,7,10,11} **relate physical properties of matter to everyday life (e.g., reflection/refraction, magnetism/compasses, density of regular/irregular objects, temperature/molecular movement, pendular motions and other vibrating objects) - systems**
- 8.50 identify sources of energy (e.g., petroleum refinement, windmills, geothermal) - **systems**
- 8.51 describe Newton's Laws of Motion and identify examples (e.g., sailboat, bouncing balls, firing a rifle) - **systems**
- 8.52 interpret and illustrate changes in waves as they pass through various mediums (e.g., sound through water and metal, light through thicknesses of glass) - **changes**
- 8.53_{7,9,10,11} **describe how sound is perceived by the ear (e.g., range of hearing, frequency, amplitude) - changes**
- 8.54_{7,9} **apply the conservation of energy theory to energy transformations (e.g., electrical/heat, heat/mechanical) - changes**
- 8.55 quantitatively represent work, power, pressure (e.g., $W=f \times d$, $P=W/t$, pressure = force/area) - **models**
- 8.56_{5,6,7,9,10} **draw vector quantities (e.g., displacement, velocity, force) - models**
- 8.57_{5,6,7,9,10} **graph and interpret the relationships (e.g., distance**
- versus time, speed versus time, acceleration versus time) - models**
- 8.58_{9,10} **illustrate qualitatively and quantitatively Newton's Laws of Motion (e.g., $F=m \times a$, $D=v \times t$, $p= m \times v$, simple machines, $W= f \times d$) - models**
- 8.59 illustrate quantitatively mechanical advantage of simple machines - **models**
- 8.60 **review fundamental earth science concepts including the characteristics of stars, topographic maps and weather maps - systems**
- 8.61 **compare and contrast the orbits of planets and comets - systems**
- 8.62 **relate rock formation to the types of fossil fuels - systems**
- 8.63 identify resources as being renewable or non-renewable - **systems**
- 8.64 summarize and explain the principle of plate tectonics - **systems**
- 8.65 explore the societal effects of meteorological phenomena - **systems**
- 8.66 describe the factors involved in mining resources - **systems**
- 8.67 compare and contrast the different types of galaxies (e.g., shape, size, components) - **systems**
- 8.68 recognize societal concerns with exploration and colonization of space - **systems**
- 8.69_{3,5} **relate climatic patterns and change to Earth's revolution and tilt of the axis - changes**
- 8.70 **examine energy transfer in Earth science (e.g., forces in construction of topographical features, causes of geological phenomena, interaction of atmosphere and oceans) - changes**
- 8.71_{3,4,5,6,7,9,10,11} **diagram the motions of the Sun, Moon, and Earth and explain the astronomical phenomena associated with these motions with an emphasis on gravitational**

variances - models

- 8.72_{5,6} use a variety of instruments to gather data (e.g., mass, temperature, electrical current, air pressure, wind direction, wind speed, and humidity) - **models**
- 8.73 construct and interpret rock layer models through stratigraphic interpretation (e.g., age, environment when deposited) - **models**
- 8.74₅ determine the relationship between the Earth's magnetism and directions on the Earth's surface through the construction and use of a compass - **models**

Science History

- 8.75_{5,6,7} articulate the historical significance of scientific discoveries (e.g., as influenced by technological demands, competition, controversy, world events, personalities, societal issues)
- 8.76_{5,6,7} compare the evolution of science concepts and theories (e.g., cells, plate tectonics, atoms, genetics)
- 8.77_{5,6,7} examine the contributions of men and women of diverse cultures to the development of science

Science, Technology, and Society

- 8.78_{5,6,10,11} give examples of how science and technology are used in daily living ◇
- 8.79_{5,6,7,10,11} use the knowledge of science and technology to make personal decisions at the local and global levels ◇
- 8.80 evaluate and critically analyze mass media reports of scientific developments and events ◇
- 8.81_{5,6,10,11} critically analyze the effects and impacts of science and technology on global and local problems (e.g., mining, manufacturing, recycling, farming, water quality)

- 8.82_{5,6,10} explore the connections between science, technology, society, and career opportunities

- 8.83_{5,6,10,11} analyze the positive and negative effects of technology on society and the influence of societal pressures on the direction of technological advances

Computer/Technology

- 8.84 use appropriate software, audio-visual and/or multimedia materials to practice and master eighth grade instructional objectives in science
- 8.85 input data using correct keying, editing, and formatting techniques
- 8.86 using the graphing application of appropriate software, select the suitable chart, table or graph to display data
- 8.87 using the graphing application of appropriate software, create tables, charts, and/or graphs
- 8.88 use a calculator to perform mathematical functions in data analysis
- 8.89 use a variety of instruments (i.e. probes, thermometers, measuring devices) to perform measurements and record data
- 8.90 use appropriate software to practice reading, interpreting, analyzing, and evaluating the data on a map, chart, graph, table, and diagram
- 8.91 use appropriate software, practice extrapolating and interpolating information from a table, chart, and graph
- 8.92 use appropriate software to practice drawing conclusions from maps, diagrams, charts, graphs, and tables
- 8.93 use appropriate software to practice making predictions, inferences, and hypothesis from maps, diagrams, charts, graphs, and tables
- 8.94 use appropriate software to practice reading an instrument or gauge
- 8.95 use a database to sort and

- search data to solve a specific problem
- 8.96 identify various careers in the field of technology
- 8.97 discriminate between legal and illegal use of electronic information (including material that is protected by copyright)
- 8.98 retrieve current data from a variety of electronic sources which might include the Internet, and/or software reference programs

Adolescent English Language Arts Education

The adolescent education program of study maintains an integrated approach to the English Language Arts. Through literature study, the refinement of research skills, and an emphasis on mastering the conventions of standard English, the learner grows in English Language Arts competency. To promote life-long learning, the student gains refined media/technology skills, work-related literacy skills, and clearer understanding of the interrelationships of these areas to the English Language Arts. All students must be provided the opportunity to select honors and/or advanced placement courses to fulfill the four units of English Language Arts credits currently required for graduation. In addition to the required yearly courses offered throughout this programmatic level, elective course development is encouraged. These elective courses must expand and enhance the English Language Arts in the areas of reading, writing, speaking, listening, and viewing. Examples of electives include, but are not limited to, courses in:

Drama
Theatre
Journalism
Mass Media
Television
Film
Speech
Creative Writing
Technical Writing
Desk Top Publishing
AP English
College Courses

It is strongly recommended that students in Advanced Placement English courses take the AP exam.

English Language Arts electives, with the exception of AP and college composition courses, (e.g., expository, persuasive/research) cannot be used as a substitute course for the required four units of English Language Arts. Course descriptions for these electives must include the appropriate West Virginia Goals and Objectives for English Language Arts (9-12) that are applicable to the elective course. All English Language Arts electives must be approved by county boards of education.

Grade Nine

English Language Arts

English Language Arts Nine will focus on the effective use of written language in educational and occupational endeavors and interpersonal communication. Instructional delivery will be enhanced by computer technology. Frequent interaction with a broad array of quality literature will encourage an appreciation for the power of the spoken and written word. Test data will provide direction and focus for prioritizing the instructional objectives that will be needed to ensure student mastery.

Listening and Speaking

- 9.1_{K,1,2,3,4,5,6,7,8} review appropriate interpersonal communication skills (e.g., asking and answering questions, following directions) ◇
- 9.2 review the listening behaviors prior to a school-wide audience activity (e.g., stay alert, resist distractions, identify and adapt to the speaker's purpose) ◇
- 9.3_{1,2,3,4,5,6,7,8} identify and record main idea, linking details, and summary (e.g., dictated material, media)
- 9.4_{2,3,4,5,6,7,8} identify the purpose, make predictions, distinguish fact from opinions and construct meaning in and beyond the text (e.g., lecture, speech, media) ◇
- 9.5 recognize and correct standard usage errors in dictated sentences and paragraphs ◇
- 9.6 recognize situations where the use of colloquial, dialectical, and slang are appropriate (e.g., peer conversation versus formal presentations) ◇
- 9.7 match the level of language formality to the situation/audience (e.g., peer conversation versus adult interaction) ◇
- 9.8_{1,2,3,5,8} write a set of complex directions and successfully communicate the directions ◇
- 9.9_{2,3,4,5,6,7,8} make predictions, distinguish fact from opinion, and construct meaning in and beyond the text (e.g., lecture, speech, media) ◇
- 9.10 ask questions in the proper form and tone at the appropriate time

(e.g., classroom lecture, conversation, panel discussion)

◇

- 9.11_{5,6,7,8} understand the importance of listening for the purpose of asking questions to foster comprehension (e.g., lecture, discussion, conversation) ◇

Reading Comprehension

- 9.12_{1,2,3,4,5,6,7,8,10,11} read literary works by national and international authors to include but not limited to: novels, drama, short story, poetry, biographies, folktales, legends and nonfiction for cultural literacy, appreciation and application
- 9.13_{1,2,3,4,5,6,7,8,10,11} identify the elements and structures of the various genres as separate entities with distinctive structures and styles (e.g., use of graphic organizer or Venn diagram)
- 9.14₁₀ identify the influences of historical, cultural and biographical (author) factors in shaping styles and voice of literary works, by genre, (e.g., group research via Internet, CD-ROM, and guest speaker(s) such as authors and historians) ◇
- 9.15_{10,11} identify common careers found in short stories and evaluate their desirability ◇
- 9.16_{10,11} locate and identify literary criticism applicable to the genre being studied by using electronic retrieval systems (e.g.,

Internet/CD ROM)

- 9.17_{10,11} evaluate, whenever applicable to the genre being studied, writing samples from the local community (e.g., brochures, editorials, poetry, community history) ◇
- 9.18 identify the different reading strategies necessary for various reading purposes (e.g., literary experience, information, and task performance) ◇
- 9.19_{2,3,5,10} read directions necessary to perform a sequential task, then perform the task, (e.g., critique directions of a household task, perform the task and report what happened) ◇
- 9.20 interpret and discuss an illustrator's purpose relative to the specific text, (e.g., critique illustrations contained in a textbook to determine their relevance to the context of the text) ◇
- 9.21_{2,3,5,6,10,11} read and state the theme of a text (e.g., in short stories, novels, drama and poetry) ◇
- 9.22_{2,3,4,5,6,7,8,11} identify central characters of a text by (e.g., graphic organizers, outlines) ◇
- 9.23_{3,7,8,10,11} make reasonable logical predictions based upon events in a story or text (e.g., predicting the ending of a story based on the introduction or predicting the outcome of a historical event or person beyond the information in the text) ◇
- 9.24_{2,3,5,10} form opinions and conclusions based upon a text ◇
- 9.25_{3,4,5,6,8,10,11} locate specific information in reading text (e.g., main idea, specific fact/statistic, definition, character) ◇
- 9.26_{K,5,8,10} recognize and explain the function of an illustration

- within a specific text (e.g., graphic organizers such as maps, charts, lists, graphs) ◇
- 9.27 create an illustration that supports a specific text (e.g., graphic organizer such as map, chart, list, graph) ◇
- 9.28_{2,3,4,5,6,7,8,10,11} use context clues to establish word meaning ◇
- 9.29_{3,7,8,10,11} recognize the function of a text (e.g., technical manual, almanac, advertisement, short story) ◇
- 9.30_{3,7,8,10,11} recognize differences in structure, content, and tone of various texts (e.g., exposition versus persuasion as in job applications, technical manual, almanac, advertisement, and literary genres, including audio/film version versus written texts) ◇
- 9.31_{3,4,5,6,8,10,11} develop different strategies of reading (e.g., skimming, scanning, analytical note taking) ◇
- 9.32_{5,6,10,11} recognize literary devices (e.g., personification, symbolism, imagery, metaphor, simile, humor, rhythm, rhyme, meter, alliteration, assonance)
- 9.33_{2,3,5,8,10,11} recognize literary style (e.g., genre, point of view, theme, author's voice including humor) ◇

Reading Vocabulary

- 9.34_{2,3,4,5,6,7,8,10,11} select vocabulary that is vivid, precise, and economical for oral and written communication including real life situations, using a variety of resources (e.g., thesaurus, dictionary, computer) ◇
- 9.35_{10,11} expand specialized vocabulary commonly used in content areas through reading and writing in progressive levels on instructional materials ◇
- 9.36_{9,10,11} recognize how words can function in different uses in oral

and written communication (e.g., Swimming [verbal noun/subject] is an Olympic sport; John is swimming [verb phrase] in the pool) ◇

- 9.37_{2,3,4,5,6,7,8,10,11} recognize the multiple meanings of words in the context of oral and written communication ◇

- 9.38_{2,3,4,5,6,7,8,10,11} **recognize the function of antonyms, synonyms, homonyms, homophones, and homographs in oral and written communication** ◇

Writing Skills

- 9.39 recognize writing strategies to address specific writing purposes, (e.g., narrative, informative and persuasive, in paragraphs or compositions) ◇
- 9.40 recognize writing strategies to write for audiences including peers, teachers, and employers (e.g., formal versus informal/informational versus conversational) ◇
- 9.41 use prewriting strategies to generate topics and plan approaches to writing tasks (e.g., clustering, idea tree, networking) ◇
- 9.42 use drafting strategies for specific writing tasks (e.g., rough draft all paragraphs, essays, book reports) ◇
- 9.43_{4,7,10} use a writing prompt to develop a composition that contains a beginning, middle, and end ◇
- 9.44_{4,7,10} develop a composition that addresses the assigned topic with a clearly worded and correctly placed thesis statement ◇
- 9.45_{4,7,10} develop a composition that is focused and coherent and has a clear, logical progression of ideas (e.g., spatial order in a descriptive essay/chronological order in a process essay) ◇
- 9.46_{4,7,10} recognize different transitional devices (e.g., introductory and – internal transitional phrases/conjunctions)

- 9.47_{4,7,10} develop a composition that uses complete sentences ◇

- 9.48_{4,7,10} develop a composition with appropriate and precise word choice ◇

- 9.49_{4,7,10} develop a composition in which errors in standard written English usage and mechanics (punctuation, spelling, capitalization) do not detract ◇

- 9.50 use revision and editing strategies to correct errors in organization, content, usage, mechanics, and spelling (e.g., write-re-write) ◇

- 9.51 demonstrate competence in penmanship and keyboarding/word processing in the writing process to produce a clear, legible product ◇

- 9.52 use electronic editing and traditional editing strategies (e.g., symbols, dictionaries) to spell words correctly in computer generated work (e.g., proper names, in, inn, [homographs]) ◇

Spelling

- 9.53 recognize and understand the social, cultural, technical/media influences on the evolution of word origins (e.g., technology, mythology, foreign languages) ◇
- 9.54 **apply rules to the spelling and pronunciation of affixes (prefixes and suffixes) in communications, both academic and real life (e.g., numeric (mono, bi, tri); negation (non, un); degrees of comparison (er, est, less); directional (trans, inter, intra)** ◇
- 9.55 **expand pronunciation and spelling skills to include specialized vocabulary commonly used in content areas (e.g., algae)** ◇
- 9.56 **apply rules to the pronunciation and spelling of homophonic consonant and vowel sounds in**

- communications, both academic and real life (e.g., context clues; editing process; phonetic principles "ph" for "f"; "ee" for "ea") ◇
- 9.57 apply rules to the pronunciation and spelling of inflectional endings in communications, (e.g., tion, ly, ing) ◇
- 9.58 students will use a variety of resources and strategies to ensure choices of pronunciation and spelling (e.g., dictionary, spell check, thesaurus) ◇

Language

- 9.59_{1,2,3,4,5,6,7,8,10,11} use editing strategies to recognize and correct errors in capitalization of titles of people, proper and common nouns and adjectives (e.g., use of graphic organizer to categorize errors and show corrections) ◇
- 9.60_{1,2,3,4,5,6,7,8,10,11} use editing strategies to recognize and correct errors in subject and verb agreement (e.g., peer record of errors in listening to oral presentation) ◇
- 9.61_{7,8,10,11} use editing strategies to recognize and correct errors in pronoun and antecedent relationships (e.g., collect and correct errors found in newspapers, magazine articles) ◇
- 9.62_{1,2,3,4,5,6,7,8} use editing strategies to recognize and correct run-on sentences and fragments, misplaced modifiers, and awkward construction (e.g., students edit a peer's mistakes in exchanging written drafts or word processor screens) ◇
- 9.63_{3,4,5,6,7,8,10,11} apply rules in compositions and editing relevant to commas, semicolons, quotation marks, and apostrophes to ensure accuracy of expression in

- student writing ◇
- 9.64_{5,6,7,8,10,11} apply editing strategies to correct errors in redundancy and faulty subordination (e.g., student writing, advertisements, magazine articles) ◇
- 9.65_{2,3,4,5,6,7,8,10,11} determine audience for whom a specific piece of writing will be generated to ensure appropriately content and style (e.g., letter of complaint, composition for peers versus teacher) ◇
- 9.66_{3,4,5,6,7,10,11} use prewriting/drafting strategies to generate topic sentences and thesis statements (e.g., brainstorming, mapping outlining, personal journal entries) ◇
- 9.67_{7,8,10,11} use writing strategies to identify and use transitional conjunctions, phrases, clauses, and sentences ◇
- 9.68_{2,8,10,11} use graphic organizers and other writing strategies to provide logical sequencing of ideas (e.g., diagram of a space, listing of process steps, charts of similarities/differences, inverted pyramid for general to specific, domino arrangement for cause and effect) ◇

Study Skills

- 9.69_{1,2,3,4,5,6,7,10,11} use guide words to locate words in a dictionary ◇
- 9.70_{2,3,4,5,6,7,8,10,11} determine which number in a dictionary definition best fits the meaning of a word in context ◇
- 9.71 expand word choices through the use of a thesaurus (e.g., composition revision) ◇
- 9.72_{10,11} use Bartlett's Familiar Quotations and other resources to select quotations and anecdotes on a variety of topics (e.g., use Bartlett's to select a quotation for use in the beginning paragraph of an essay) ◇

- 9.73 consult Reader's Guide to select a variety of periodical resources relevant to a given topic (e.g., small groups work as teams to seek resources on assigned topics) ◇
- 9.74_{8,10,11} use the card catalog or an on-line catalog to retrieve information (e.g., reports, speeches, projects) ◇
- 9.75 retrieve information from electronic media (e.g., access the Internet, CD ROM and other technologies as they become available for research purposes) ◇
- 9.76 use word processing skills to produce a multi-page document (e.g., copy and move text, adjust margins, select justifications, use tools, change fonts, and paginate) ◇
- 9.77_{4,8,10} use parts of books (e.g., table of contents or index) to locate information ◇
- 9.78_{10,11} use book's glossary to find the definition of an unfamiliar word ◇
- 9.79₁₀ know the parts of a newspaper and locate information in a newspaper ◇
- 9.80₁₀ know the parts of a telephone directory and use them to locate information ◇
- 9.81_{10,11} use outlining to organize text and composition information by selecting main points and supporting details (e.g., take notes from a text and organize them in outline form; prewrite an essay in outline form) ◇
- 9.82 practice correct use of bibliographic format in research documentation (e.g., compile a bibliography in standard MLA format) ◇
- 9.83 practice notetaking skills to process and organize information (e.g., listening and recording from teacher or text; interviewing) ◇
- 9.84 know and respond appropriately to directives in essay prompts (e.g., "compare"/"contrast"; "discuss"; "interpret"; "evaluate") ◇
- 9.85 select appropriate study/review techniques for particular materials (e.g., read headings and transform them into questions) ◇
- 9.86 apply research skills to daily situations (e.g., use technology to learn about a community event or to make informed career decisions) ◇
- 9.87 explain the concept of intellectual property (e.g., media copyright laws) ◇
- 9.88 use memorization techniques to facilitate retention (e.g., mnemonics, acronyms)
- 9.89 set goals for learning in school and beyond, and review progress in meeting goals ◇

Computer/Technology

- 9.90 use appropriate software to practice and master ninth grade English language arts instructional objectives
- 9.91 use a variety of audiovisual and multimedia materials to practice and master ninth grade English language arts instructional objectives
- 9.92 using a word processor, demonstrate correct keying, editing, and formatting techniques
- 9.93 use appropriate software to practice and master the five step writing process including prewriting, drafting, editing, revising, and publishing
- 9.94 use appropriate software to practice and master desktop publishing incorporating text, graphics, and various fonts in a variety of formats
- 9.95 select and use appropriate technologies to locate and use reference sources
- 9.96 use graphic software to organize, analyze and present information
- 9.97 select and use appropriate technologies to create and deliver presentations
- 9.98 use simulation software for

investigating open-ended problems, formatting questions, and extending problem solving situations

9.99 use simulation software to practice critical thinking and decision making

Grade Ten English Language Arts

The English Language Arts Ten emphasis will be on the use of written language for educational, occupational, and personal endeavors. Preparation will include critiquing oral presentations and using speaking and listening while reading and writing. Instructional delivery will be enhanced by computer technology. Frequent interaction with a broadened array of literature will encourage an increased appreciation for the power of the spoken and written word. Testing data will provide direction and focus for prioritizing the instructional objectives that will ensure student mastery.

Listening and Speaking

- 10.1 review appropriate classroom speaking and listening skills (e.g., asking questions, answering questions and following directions) ◇
- 10.2 review the listening behaviors prior to a school-wide audience activity (e.g., stay alert, resist distractions, identify the speaker's purpose and adaptation) ◇
- 10.3 understand principles and values of group discussion (e.g., reaching a decision, solving a problem)
- 10.4_{5,6,7,8} use interviewing skills of questioning, note taking, exploring, summarizing and roles to explored extend meaning beyond the text ◇
- 10.5 listen to text containing common errors in standard English usage (e.g., subject verb agreement, double subjects, double negatives, misuse of pronouns, verbs and/or verb tenses) and to identify and correct those errors ◇
- 10.6 recognize and record common usage errors from daily experiences and analyze the errors for type, extent and audience ◇

- 10.7_{5,6,7,8} listen to and use context clues to identify meaning of words and/or structures (e.g., malapropisms, oxymorons)
- 10.8_{5,6,7,8} relate personal experience to information heard to construct new meaning (e.g., watch a television show and compare/contrast the new knowledge with personal experience)
- 10.9_{5,6,7,8} listen to a speech (e.g., the funeral orations from Shakespeare's Julius Caesar) to identify specific examples of central idea, fact versus opinion and persuasive devices (e.g., human interest, emotional appeal, repetition)
- 10.10 revise a text from a written to an oral one to show adaptations a writer makes from writing to speaking (e.g., how to paper) ◇
- 10.11_{1,2,3,5,6,7,8} listen to a speech and analyze adaptations of text from written to oral to include audience, sequence, and style

Reading Comprehension

- 10.12_{1,2,3,4,5,6,7,8,9,11} read literary works by national and international authors to include but not limited to novels, drama, short

- story and poetry for cultural literacy, appreciation and application ◇
- 10.13 identify and research the influences of historical, cultural and biographical (author) factors in shaping styles and voice of literary works (e.g., group research via Internet or CD-ROM, guest speakers) ◇
- 10.14_{2,3,5,8,9,11} given a variety of selections from the various genres, compare/contrast characteristics of author's style, purpose and tone (e.g., class discussion, panel presentation, newspaper/scrapbook) ◇
- 10.15_{9,11} identify common careers found in fiction (novels) and evaluate their desirability ◇
- 10.16_{9,11} locate and identify literary criticism applicable to the genre being studied by using electronic retrieval systems (e.g., Internet/CD ROM)
- 10.17_{9,11} evaluate, whenever applicable to the genre being studied, writing samples from the local community (e.g., brochures, editorials, poetry, community history)
- 10.18 classify texts according to various reading purposes (e.g., literary experience, information and task performance) ◇
- 10.19_{5,8,9} use graphic organizers such as webbing/charting to show important ideas and relationships of ideas (e.g., read three poems by an author to identify commonalities) ◇
- 10.20_{4,6,7,8,9} differentiate between fact and opinion in text (e.g., review of a cultural event) ◇
- 10.21_{9,11} classify information in text as necessary or unnecessary to understanding the selection (e.g., review advertisements, brochures, and schedules to determine necessary information) ◇
- 10.22₁₁ determine point of view in expository text (e.g., compare/contrast the differences between author/subject in two or more newspaper editorials) ◇
- 10.23_{5,8,9,11} make generalizations from implicit ideas (e.g., trace the implicit ideas that lead to a surprise ending in a short story such as those of O'Henry or Saki) ◇
- 10.24_{2,3,5,9} read directions necessary to sequentially perform a task, then perform the task ◇
- 10.25_{9,11} after locating specific information in a text, classify the information as necessary or unnecessary to understanding the text (e.g., essential facts versus supplementary description, value of a figure of speech, author's biographical background/experience) ◇
- 10.26_{K,5,8,9} create an illustration/graphic organizer to demonstrate the importance of and relationship between ideas ◇
- 10.27_{2,3,4,5,6,7,8,9,11} continue to use context clues to establish word meaning ◇
- 10.28_{3,7,8,9,11} by analyzing content and structure, identify the source of a piece of text by analyzing content and structure (e.g., exposition versus persuasive essay, author/genre advertisement, biographical dictionary) ◇
- 10.29_{3,7,8,9,11} compare/contrast types of texts, according to content, structure, and tone (e.g., exposition versus persuasion as in technical manual, almanac, advertisement, and literary genre) ◇
- 10.30₁₁ properly follow a specific set of instructions (e.g., following directions on a test) ◇
- 10.31_{3,5,8,9,11} make decisions by comparing facts ◇
- 10.32₁₁ infer ideas from literature and

exposition ◇

- 10.33_{7,8,9,11} recognize persuasive language and techniques (e.g., in particular propaganda in advertising) ◇

Reading Vocabulary

- 10.34_{2,3,4,5,6,7,8,9,11} select vocabulary that is vivid, precise, and economical for oral and written communication including real life situations, using a variety of resources (e.g., thesaurus, dictionary, computer) ◇
- 10.35_{9,11} expand specialized vocabulary commonly used in content areas through reading and writing in progressive levels of instructional materials ◇
- 10.36_{9,11} show how words can function in different uses in oral and written communication including real life situations (e.g., Jim (noun/subject) is my friend, my friend is Jim (predicate nominative) ◇
- 10.37_{2,3,4,5,6,7,8,9,11} recognize the multiple meanings of words in the context of oral and written communication including real life situations (e.g., short story, speech, conversation) ◇
- 10.38_{2,3,4,5,6,7,8,9,11} recognize and understand the function of antonyms, synonyms, homonyms, homophones, and homographs in oral and written communication and real life situations ◇

Writing Skills

- 10.39 use writing strategies to address specific writing purposes (e.g., narrative, descriptive, informative and persuasive) in paragraphs or compositions ◇
- 10.40 use writing strategies to write for audiences including peers, teachers, and employers (e.g., formal versus informal/informational versus

conversational) ◇

- 10.41 use prewriting strategies to generate topics and plan approaches to writing tasks (e.g., brainstorming, mapping, outlining) ◇
- 10.42 use drafting strategies for all specific writing tasks (e.g., rough draft all paragraphs, essays, book reports) ◇
- 10.43_{4,7} use a writing prompt to develop a composition that contains a beginning, middle, and end ◇
- 10.44_{4,7} develop a composition that addresses the assigned topic with a clearly worded thesis statement which is supported by relevant details ◇
- 10.45_{4,7} develop a composition that is focused and coherent and has a clear, logical progression of ideas (e.g., spatial order in a descriptive essay/chronological order in a process essay) ◇
- 10.46_{4,7} use and identify different transitional devices (e.g., introductory and internal transitional phrases/conjunctions) ◇
- 10.47_{4,7} develop a composition that demonstrates variation in sentence structure ◇
- 10.48_{4,7} develop a composition where word choice is vivid, precise, and economical ◇
- 10.49_{4,7} develop a composition in which errors in standard written English usage and mechanics (e.g., punctuation, spelling, capitalization) do not occur ◇
- 10.50 use revision and editing strategies to delete or correct errors in organization, content, usage, mechanics, and spelling (e.g., write-re-write) ◇
- 10.51 demonstrate competence in penmanship and keyboarding/word processing in the writing process to produce a

clear, legible product ◇

- 10.52 use electronic editing tools and traditional editing strategies (e.g., symbols, dictionaries) for words not detected by electronic tools in computer generated work (e.g., proper names [in, inn] [homographs]) ◇

Spelling

- 10.53 recognize and understand the social, cultural, technical/media influences on the evolution of word origins (e.g., from technology, mythology, foreign language) ◇
- 10.54 apply rules to the spelling and pronunciation of affixes (prefixes and suffixes) in communications, both academic and real life (e.g., numeric (mono, bi, tri); negation (non, un); degrees of comparison (er, est, less); directional (trans, inter, intra) ◇
- 10.55 expand pronunciation and spelling skills to include specialized vocabulary commonly used in content areas (e.g., algae) ◇
- 10.56 apply rules to the pronunciation and spelling of homophonic consonant and vowel sounds in communications both academic and real life (e.g., context clues; editing process; phonetic principles "ph" for "f"; "ee" for "ea") ◇
- 10.57 apply rules to the pronunciation and spelling of inflectional endings in communications both academic and real life (e.g., tion, ly, ing) ◇
- 10.58 students will use a variety of resources and strategies to ensure choices of pronunciation and spelling (e.g., dictionary, spell check, thesaurus) ◇

Language

- 10.59^{1,2,3,5,6,7,8,11} recognize content and organizational strategies that identify supporting sentences and paragraphs (e.g., example/illustration, personal anecdote, extended definition, analogy) ◇
- 10.60^{7,8,9,11} recognize content and organizational strategies that identify transitional devices (e.g., repetition of key words and sentences/sentence links, in particular contrast, cause-effect, addition, time, and person/place/thing relationships) ◇
- 10.61^{3,4,5,6,7,9,11} recognize content and organizational strategies to identify topic sentences and thesis statements (e.g., placement, figurative or literal, singular or multiple focus, implied versus stated) ◇
- 10.62^{7,8,11} recognize descriptive language (e.g., connotation, repetition, sensory language [imagery], figurative language [personification, metaphor, apostrophe], symbolism, musical effect) ◇
- 10.63^{1,2,3,4,5,6,7,8,9} use capitalization rules to generate sentences containing correct capitalizations of proper/common nouns, proper adjectives, direction as a region, and titles of people (e.g., students generate incorrect sentences to be corrected by peers) ◇
- 10.64^{3,4,5,6,7,8,9} use punctuation rules to recognize and correct sentences with errors in use of commas as interrupters; apostrophes with possessives; quotation marks with dialogue; colons with lists; semicolons between independent clauses; and commas with appositives (e.g., in a student-generated composition that includes usage of all these skill areas,

- peers identify and edit errors)◇
- 10.65^{1,2,3,4,5,7,8,9} use correct verb tense by recognizing appropriate situations for tense shifts (e.g., rewrite a paragraph in a different tense)◇
- 10.66^{7,8} recognize and correct errors in subject/verb agreement with emphasis on indefinite pronouns ◇
- 10.67^{8,9} correct errors in parallel structure in paragraphs and compositions (e.g., student work, newspaper articles, editorials)◇
- 10.68^{5,6,7,8,9} correct errors in redundancy in paragraphs and compositions (e.g., student work)◇
- 10.69^{7,8,9} correct errors of misplaced modifiers in sentences and paragraphs, (e.g., advertisements)◇
- 10.70^{2,3,4,5,6,7,8,9} recognize the specific audience for whom a piece of writing has been generated (e.g., letter of job application/scholarship application, essay, personal letter)◇

Study Skills

- 10.71^{1,2,3,4,5,6,7,9,11} use guide words to locate increasingly more difficult words in a dictionary (e.g., two-part words, foreign terms/phrases, archaic words) ◇
- 10.72 determine which word choice in a dictionary entry that best fits the shades of meaning implied in the context of a given sentence ◇
- 10.73 expand word choices through the use of a thesaurus (e.g., revise compositions with more vivid word choices) ◇
- 10.74^{9,11} use Bartlett's Familiar Quotations and other resources to select quotations and/or anecdotes on a variety of topics (e.g., reference a quotation to introduce a

speech or composition) ◇

- 10.75 consult the Reader's Guide to select a variety of periodical resources relevant to a given topic (e.g., individual student assignment to seek resources on assigned topics) ◇
- 10.76^{8,9,11} use the card catalog or an on-line catalog system to retrieve information (e.g., reports, projects, speeches) ◇
- 10.77 retrieve information from electronic media for research purposes (e.g., access Internet, CD ROM and other technologies as available) ◇
- 10.78 apply word processing skills to produce a multi-page document (e.g., copy and move text, adjust margins, select justifications, use tools, change fonts, and paginate) ◇
- 10.79^{4,8,9} use parts of books to locate information (e.g., table of contents, index) ◇
- 10.80^{9,11} use the glossary of a book to find the definition of an unfamiliar word (e.g., allusions, technical terms) ◇
- 10.81₉ know the parts of a newspaper and a telephone directory to locate information ◇
- 10.82₉ use outlining to organize text and information by selecting main points and supporting details (e.g., take notes from a text and organize them in outline form; prewrite an essay) ◇
- 10.83 practice correct use of bibliographic format in research documentation (e.g., compile an annotated bibliography in standard MLA format) ◇
- 10.84 practice note taking skills to process and organize information (e.g., listening and recording from video tapes, film strips, audio tapes) ◇
- 10.85 know the respond appropriately to directives in essay prompts (e.g., "analyze", "interpret",

- "synthesize") ◇
- 10.86 use appropriate study/review techniques for given materials (e.g., paraphrase, paragraphs, mnemonics) ◇
- 10.87 apply research skills to daily situations (e.g., use technology to make informed career decisions) ◇
- 10.88 explain the concept of intellectual property in all media, as it is protected by copyright laws (e.g., integrity of the research process; video copyright restrictions) ◇
- 10.89 set goals for learning in school and beyond, and review progress in meeting goals ◇
- Computer/Technology**
- 10.81 use appropriate software to practice and master tenth grade English language arts instructional objectives
- 10.82 use a variety of audiovisual and multimedia materials to practice and master tenth grade English language arts instructional objectives
- 10.83 using a word processor, demonstrate correct keying, editing, and formatting techniques
- 10.84 use appropriate software to practice and master the five step writing process including prewriting, drafting, editing, revising, and publishing
- 10.85 use appropriate software to practice and master desktop publishing incorporating text, graphics, and various fonts in a variety of formats
- 10.86 select and use appropriate technologies to locate and use reference sources
- 10.87 use graphic software to organize, analyze and present information
- 10.88 select and use appropriate technologies to create and deliver presentations
- 10.89 use simulation software for investigating open-ended problems, formatting questions, and extending problem solving situations
- 10.90 use simulation software to practice critical thinking and decision making

Grade Eleven

English Language Arts

In English Language Arts Eleven, fundamental literary and communication skills are refined and enhanced. Indeed, English Language Arts Eleven represents another leap in academic rigor and depth. In addition, career formalization, including college entrance exam preparation and workplace readiness skills, becomes a primary focus. Student proficiency will be diagnosed to determine instructional priorities. As the need for challenging research skills becomes more vital, the incorporation of technology will be emphasized.

Listening and Speaking

- 11.1_{1,2,3,4,5,6,7,8,9,10} review appropriate classroom speaking and listening skills (e.g., asking questions, answering questions, following directions) ◇
- 11.2_{1,2,3,4,5,6,7,8,9,10} prior to a school-wide audience activity, review listening behaviors (e.g., stay alert, resist distractions, identify speaker's purpose and adapt to it) to become a responsible audience member ◇
- 11.3 identify barriers to listening and generate methods to overcome them ◇
- 11.4_{5,6,7,8} compare and contrast shared personal cultural experiences

- with information gathered from resources in the media center ◇
- 11.5 listen and respond to the sensory appeal of poetry with any medium of personal expression (e.g., art/illustration, music, response journal)
- 11.6₁₀ practice efficient notetaking skills with careful attention to identifying purpose, main ideas/key facts, overall themes in order to synthesize information into a well-developed essay ◇
- 11.7 determine purpose, appropriate usage and audience by listening to a variety of formal, informal and colloquial discourse ◇
- 11.8_{2,3,4,5,6,7,8,10} identify various speaking techniques used to influence an audience through emotional appeal (propaganda, bias, distortion) by listening to vehicles from the media (e.g., news broadcasts, commercials, public addresses) ◇
- 11.9 demonstrate questioning and critical thinking skills in a structured class discussion of literary topics and/or cultural connections ◇
- 11.10 analyze, interpret and evaluate a literary selection via some group activity (e.g., panel group discussion)
- 11.11 utilize effective argumentation techniques in a formally prepared and rehearsed speech delivered to the class ◇
- 11.12 interview primary sources as part of the research process ◇
- 11.13 project shifts in cultural trends from the present to the future (21st Century) and demonstrate through oral presentation (e.g., discussion, panel

- presentation, role play) ◇
- 11.14 recognize speaking styles appropriate to the given audience and deliver oral presentation accordingly ◇

Reading Comprehension

- 11.15_{1,2,3,4,5,6,7,8,9,10,11} read literary works by national and international authors to include, but not be limited to novels, drama, short story, poetry, and nonfiction for cultural literacy, appreciation and application ◇
- 11.16 research, analyze and evaluate the influences of historical, cultural and biographical (author) factors in shaping styles and voice of literary works (e.g., independent analysis of historical documents, periodicals and appropriate resources) ◇
- 11.17 analyze and evaluate characteristics of author's style and purpose given a variety of selections from the various genres (e.g., written character analysis or critique) ◇
- 11.18 examine the effects of technical and stylistic components in an author's work(s) in determining literary merit (e.g., write a feature article or critical review) ◇
- 11.19 read examples of various genres written by a single author and compare/contrast style and literary merit (e.g., read a passage from Twain's Huckleberry Finn, Twain's epigrams, and his "The Celebrated Jumping Frog of Calaveras County")
- 11.20 read a piece written in one format and, retaining theme and author's intent, rewrite it in a different genre (e.g., reproduce "The Pit and the Pendulum" as a poem or

- "Stopping by the Woods on a Snowy Evening" as a descriptive essay) ◇
- 11.21 compare/contrast the style, content, merit and impact of a literary piece produced in various forms of media (e.g., evaluate *The Great Gatsby* as a novel and as a film; conduct a debate with the "author" versus the "director")
- 11.22_{9,10} identify common careers found in nonfiction and fictional works and evaluate their desirability ◇
- 11.23_{9,10} locate and identify literary criticism applicable to the genre being studied by using electronic retrieval systems (e.g., Internet/CD ROM)
- 11.24_{9,10} evaluate, whenever applicable to the genre being studied, writing samples from the local community (e.g., brochures, editorials, poetry, community history)
- 11.25 demonstrate use of reading strategies necessary for various reading purposes (e.g., literary experience, information and task performance) ◇
- 11.26_{3,4,5,6,7,8,9,10} draw conclusions substantiated by text, (e.g., read an educational catalog and determine the desirability of attending that school) ◇
- 11.27_{6,8,9,10} infer implicit ideas and draw conclusions during the act of reading (e.g., using historical journal articles, speeches or statistical data) ◇
- 11.28_{K,3,5,6,7,8,9} interpret character traits based on the context of the entire story (e.g., the roles of Willie Lowman, Hester Prynne, Richard Cory)
- 11.29_{K,8,9,10} make generalizations from implicit ideas (e.g., first paragraph of *The Declaration of Independence*) ◇
- 11.30_{9,10} identify consequences for not properly following a specific set of instructions (e.g., applying for a job, college, or financial aid or following directions on a test) ◇
- 11.31_{9,10} locate specific information in a text, classifying the information as necessary or unnecessary to understanding the text (e.g., essential facts versus supplementary description, value of an author's imagery, author's biographical background/experience) ◇
- 11.32_{K,5,8,9,10} create a graphic organizer to show important ideas in text ◇
- 11.33_{2,3,4,5,6,7,8,9,10} continue to use context clues to establish word meaning ◇
- 11.34_{3,7,8,9,10} identify the type or genre of a text by analyzing content, language, and style (e.g., expository versus persuasive essay, author/genre, advertisement, biographical dictionary) ◇
- 11.35_{9,10} recognize the organizational pattern of expository text (e.g., process, comparison/contrast, classification, cause-effect, narrative) ◇
- 11.36_{3,7,8,9,10} continue to compare/contrast types of texts, according to content, structure, and tone (e.g., Puritan poetry versus free verse poetry, author/genre, expository versus persuasive) ◇
- 11.37_{5,8,10} identify a particular author's work and recognize the use of tone (e.g., Mark Twain's use of humor, Jonathan Edwards' religious fervor, Frederick Douglass's advocacy)
- 11.38_{3,8,9,10} continue to differentiate between fact and opinion in

order to make decisions by comparing facts (e.g., consumer magazines, travel brochures, letters to the Editor) ◇

11.39_{2,3,9,10} differentiate between human interest elements and hard fact/opinion in a text (e.g., subjective versus objective news reporting as in human interest versus straight news story) ◇

11.40₁₀ continue to determine point of view in expository text (e.g., objective versus subjective, first/second/third person, omniscient versus episodic) ◇

11.41_{7,8,9,10} recognize persuasive language and techniques (e.g., authority of speaker, special interest bias, propaganda in advertising)

11.42_{5,6,8,9,10} interpret various literary devices and techniques, in particular, figurative language (e.g., personification, archetypes, allegorical patterns) ◇

11.43_{3,4,5,6,8,9} continue to practice different reading strategies, in particular skimming for overall understanding and scanning for keywords and ideas (e.g., Reader's Guide listings, chronology of events, captioned illustrations) ◇

Reading Vocabulary

11.44_{2,3,4,5,6,7,8,9,10} select vocabulary that is vivid, precise, and economical for oral and written communication including daily situations, using a variety of resources (e.g., thesaurus, dictionary, computer) ◇

11.45_{9,10} expand specialized vocabulary commonly used in content areas through reading and writing in progressive levels of

instructional materials ◇

11.46_{9,10} identify and demonstrate how words can function in different uses in oral and written communication including daily situations and formal writing (e.g., John finished his science fair project [noun/direct object]; Economists project [verb] an increase in retail sales) ◇

11.47_{2,3,4,5,6,7,8,9,10} compare and contrast the multiple meanings of words in the context of oral and written communication including daily situations (e.g., short story, speech, conversation)

11.48_{2,3,4,5,6,7,8,9,10} discriminate between antonyms, synonyms, homonyms, homophones, and homographs

Writing

11.49 use writing strategies to develop text to address specific writing purposes, to include, but not be limited to, narrative, informative, persuasive and poetical ◇

11.50 adapt a short piece of text to multiple audiences (e.g., peers, teachers, general public) ◇

11.51 use a writing prompt to experiment with point of view (e.g., distance between the writer and his/her subject) ◇

11.52 identify rhetorical devices (e.g., parallel structure, antithesis, an appeal to emotion) ◇

11.53 identify types of written propaganda (e.g., bandwagon, plain folk, and testimonials) ◇

11.54 develop a personal style and voice in student's writing (e.g., gender, humor, sentence patterns) ◇

11.55 identify and begin to use more subtle forms of transition in a composition (e.g., sentence links, repetition of key words or sentences) ◇

11.56 select a prose quotation and use it correctly in a piece of writing ◇

- 11.57 write an analysis of a poem, short story, novel, or play using terminology and characteristics of the genre ◇
- 11.58 write a letter of application with a resume ◇
- 11.59 produce an informative or persuasive research paper following a style sheet (MLA, APA, or teacher generated) ◇
- 11.60 demonstrate competence in word processing and, when possible, desktop publishing in the publication of written text ◇
- 11.61_{4,7,10} produce written text in which errors in standard written English usage and mechanics (punctuation, spelling, capitalization) do not occur ◇
- 11.62 use traditional editing strategies (e.g., symbols, dictionaries) for words not detected by electronic editing devices in computer generated work (e.g., proper names, in inn [homohyms]) ◇

Spelling

- 11.63 recognize and understand the social, cultural, technical/media influences on the evolution of word origins (e.g., from technology, mythology, foreign language) ◇
- 11.64 apply rules to the spelling and pronunciation of (prefixes and suffixes in communications (e.g., numeric [mono-, bi-, tri-]; negation [non-, un-]; degrees of comparison [er-, est-, less-]; directional [trans-, inter-, intra-]) ◇
- 11.65 expand pronunciation and spelling skills to include specialized vocabulary commonly used in content areas (e.g., algae) ◇
- 11.66 apply rules to the pronunciation and spelling of homophonic consonant and vowel sounds in

communications (e.g., context clues; editing process; phonetic principles "ph" for "f"; "ee" for "ea") ◇

- 11.67 apply rules to the pronunciation and spelling of inflectional endings in communications both academic and real life (e.g., -tion, -ly, -ing) ◇
- 11.68 use a variety of resources and strategies to ensure choices of pronunciation and spelling (e.g., spell check, thesaurus) ◇

Language

- 11.69_{1,2,3,4,5,6,7,8,9,10} evaluate written text and correct for errors in capitalization (e.g., proper/common nouns, proper adjectives, direction as region, and titles of people) ◇
- 11.70_{4,5,6,7,8,9,10} use punctuation rules to recognize and correct sentences with errors in use of commas as interrupters; apostrophes with possessives; quotation marks with dialogue; colons with lists; semicolons between independent clauses, and commas with appositives (e.g., in a student-generated composition which includes usage of all these skill areas, peers identify and edit errors, where necessary) ◇
- 11.71_{1,2,3,4,5,7,8,9,10} use correct verb tense by recognizing appropriate situations for tense shifts (e.g., write a paragraph composition to illustrate correct tense) ◇
- 11.72_{7,8,10} recognize and correct errors in subject/verb agreement with emphasis on indefinite pronouns (e.g., within a composition, substitute indefinite pronouns for various nouns functioning as

- subjects and change verbs, appropriately) ◇
- 11.73_{8,9} correct errors in parallel structure in paragraphs and compositions (e.g., student work, newspaper articles, editorials) ◇
- 11.74_{5,6,7,8,9,10} correct errors in redundancy in paragraphs and compositions (e.g., student work, newspaper articles and editorials) ◇
- 11.75_{7,8,9} correct errors of misplaced modifiers in sentences, paragraphs, and essays (e.g., advertisements, student essays, articles) ◇
- 11.76_{2,3,4,5,6,7,8,9,10} recognize the specific audience for whom a piece of writing has been generated (e.g., letter of job application/scholarship application, essay, personal letter) ◇
- 11.77_{1,2,3,5,6,7,8,10} use content and organizational strategies to identify supporting sentences and paragraphs (e.g., example/illustration, personal anecdote, extended definition, analogy) ◇
- 11.78_{7,8,9,10} use content and organizational strategies to identify transitional devices (e.g., repetition of keywords and sentences; sentence links; particular relationships in contrast, cause-effect, time, and person/place/thing relationships) ◇
- 11.79_{3,4,5,6,7,9} use content and organizational strategies to identify topic sentences and thesis statements (e.g., placement, figurative or literal, singular or multiple focus, implied versus stated) ◇
- 11.80_{7,8,10} analyze text for the use of descriptive language (e.g., connotation, repetition, sensory language [imagery],

figurative language [personification, metaphor, apostrophe], symbolism, musical effect) ◇

Study Skills

- 11.81 develop a sound notetaking skill that can be applied to classroom, library, interview and other life circumstances ◇
- 11.82_{8,9,10} identify the role and function of the library/media center including all electronic retrieval systems (e.g., CD ROM Reader's Guide and card catalog, encyclopedia, Internet) (uses cross referencing while gathering information for a research topic) ◇
- 11.83 identify copyright and plagiarism laws in the editing process ◇
- 11.84 judge the reliability of sources for bias and authority ◇
- 11.85_{9,10} demonstrate the ability to use the dictionary by using guide words to locate a dictionary entry and identify the best definition for the word's context ◇
- 11.86_{9,10} demonstrate the ability to use a variety of reference sources (e.g., thesaurus, Bartlett's Familiar Quotations, atlas, almanac, specialized dictionaries, and the glossaries) ◇
- 11.87 follow a style sheet (e.g., MLA, APA, teacher-generated) ◇
- 11.88₁₀ collect and organize information through systematic note taking and outlining ◇
- 11.89 use available primary sources when gathering information, taking into consideration the motives and perspective of those sources ◇
- 11.90 consult various career sources (e.g., Occupational Outlooks Handbook, community

- resources, college/training center catalogs) ◇
- 11.91 set goals for learning in school and beyond, and review progress in meeting goals ◇

Computer/Technology

- 11.92 use appropriate software to practice and master eleventh grade English language arts instructional objectives
- 11.93 use a variety of audiovisual and multimedia materials to practice and master eleventh grade English language arts instructional objectives
- 11.94 using a word processor, demonstrate correct keying, editing, and formatting techniques
- 11.95 use appropriate software to practice and master the five step writing process including

- prewriting, drafting, editing, revising, and publishing
- 11.96 use appropriate software to practice and master desktop publishing incorporating text, graphics, and various fonts in a variety of formats
- 11.97 select and use appropriate technologies to locate and use reference sources
- 11.98 use graphic software to organize, analyze and present information
- 11.99 select and use appropriate technologies to create and deliver presentations
- 11.100 use simulation software for investigating open-ended problems, formatting questions, and extending problem solving situations
- 11.101 use simulation software to practice critical thinking and decision making

Grade Twelve English Language Arts

English Language Arts Twelve provides focus and polish in personal goals and academic proficiency. Experiences such as a senior project or a sophisticated persuasive research paper should culminate the twelve-year career. Readiness for the work place or post secondary education is the final reality check. The expansion and appreciation of language and literature is the focus of the senior year. Shakespeare can speak to students, but the anxiety of an uncertain future haunts them.

Listening and Speaking

- 12.1 review appropriate classroom speaking and listening skills (e.g., asking questions, answering questions, following directions) ◇
- 12.2_{5,6,7,8} continue to develop skills in recognizing and overcoming barriers to listening in a variety of large and small group, formal and informal settings (e.g., absence of modulation in voice, the speaker's pace, poor enunciation, physical behaviors

or obstacles) ◇

- 12.3_{1,2,3,4,5,6,7,8} continue to adapt/apply listening skills in order to interpret a variety of situations (e.g., note taking, interview, broadcast media including television, radio, CD ROM, Internet, and live oral performance) ◇
- 12.4_{2,3,4,5,6,7,8} continue to identify organizational patterns and interpret messages in narrative, informational, and persuasive contexts (e.g., fact vs. opinion,

- propaganda, bias, and emotional appeal) ◇
- 12.5 understand the difference between argumentation and debate (e.g., structure, organization, research, presentation) ◇
- 12.6_{1,2,3,4,5,6,7,8} continue to adapt/apply speaking skills in order to participate in a variety of situations (e.g., panel/group discussion, debate, telephone/teleconference, interview, oral report) ◇
- 12.7_{1,2,3,4,5,6,7} continue to broaden speaking skills by editing and correcting usage according to conventional Standard English, distinguishing dialectal, colloquial, and slang variations (e.g., comparing a local news anchor person's pronunciation to a national news anchor's standard delivery, "shuck" versus "husk" corn, accepted use of slang expressions) ◇

Reading Comprehension

- 12.8_{1,2,3,4,5,6,7,8,9,10,11} read literary works by national and international authors to include, but not be limited to, novels, drama, short story, poetry and nonfiction for cultural literacy, appreciation and application ◇
- 12.9₁₁ research, analyze, and evaluate the influences of historical, cultural and biographical (author) factors in shaping styles and voice of two literary works to compare and contrast them (e.g., independent analysis of historical documents, periodicals, and appropriate resources) ◇
- 12.10₁₁ analyze and evaluate characteristics of author's style and purpose given a variety of selections from the various genres (e.g., written character analysis or critique) ◇
- 12.11₁₁ examine the effects of technical and stylistic components in an author's work(s) in determining

- literary merit (e.g., write a feature article or critical review) ◇
- 12.12₁₁ read examples of various genres written by a single author and compare/contrast style and literary merit (e.g., read the play *Murder in the Cathedral* and "The Love Song of Alfred Prufrock" by T.S. Elliot)
- 12.13₁₁ read a piece written in one format and, retaining theme and author's intent, rewrite it in a different genre (e.g., reproduce *Hamlet* as an epic poem; rewrite Yeat's "The Lake Isle of Innisfree" as a descriptive essay) ◇
- 12.14₁₁ compare/contrast the style, content, merit and impact of a literary piece produced in various forms of media (e.g., evaluate *Wuthering Heights* as a novel and as a film; conduct a debate with the "author" versus the "director") ◇
- 12.15_{9,10,11} identify common careers found in nonfiction and fictional works ◇
- 12.16_{9,10,11} locate and identify literary criticism applicable to the genre being studied by using electronic retrieval system (e.g., Internet/CD ROM) ◇
- 12.17_{9,10,11} evaluate, whenever applicable to the genre being studied, writing samples from the local community (e.g., brochures, editorials, poetry, community history) ◇
- 12.18 demonstrate and apply use of reading strategies necessary for various reading purposes (e.g., literary experience, information, and task performance) ◇
- 12.19_{3,4,5,6,7,8,9,10,11} draw conclusions substantiated by text (e.g., read two educational catalogs to determine which offers the best program of study for a particular career choice) ◇
- 12.20_{6,8,9,10,11} recognize implicit ideas and draw conclusions during the act of reading (e.g.,

- using historical journal articles, speeches or statistical data) ◇
- 12.21_{K,3,5,6,7,8,9,11} interpret character traits based on the context of the entire story (e.g., the roles of Lady Macbeth, Heathcliff, Beowulf)
- 12.22_{K,8,9,10,11} make generalizations from implicit ideas (e.g., Francis Bacon's "Of Studies" and its relevance to study skills today) ◇
- 12.23_{9,10,11} recognize consequences for not following a specific set of instructions (e.g., scholarship, financial aid applications, selective service and voter registration) ◇
- 12.24_{9,10,11} locate specific information in a text, classifying the information as necessary or unnecessary to understanding the text (e.g., essential facts versus supplementary description, value of an author's imagery author's biographical background/experience) ◇
- 12.25_{K,5,8,9,10} create graphic organizers to compare and contrast ideas within text ◇
- 12.26_{2,3,4,5,6,7,8,9,10,11} continue to use context clues to establish word meaning ◇
- 12.27_{3,7,8,9,10,11} identify the type or genre of a text, by analyzing content, language, and style (e.g., expository versus persuasive essay, author/genre, advertisement biographical dictionary) ◇
- 12.28_{9,10,11} analyze the organizational pattern of expository text (e.g., process, comparison/contrast, classification, cause effect narrative) ◇
- 12.29_{3,7,8,9,10,11} continue to compare/contrast types of texts, according to content, structure, and tone (e.g., blank verse, free verse, authorization, expository versus persuasive) ◇
- 12.30_{5,8,10,11} analyze a particular author's use of tone (e.g., A. E. Housman's use of humor, O'Henry's use of irony, Jonathan Swift's use of satire)
- 12.31_{3,8,9,10,11} continue to differentiate between fact and opinion in order to make decisions by comparing facts (e.g., college pamphlets, military recruitment brochures, junk mail advertising) ◇
- 12.32_{2,3,9,10,11} differentiate between human interest elements and hard fact/opinion in a text (e.g., subjective versus objective news reporting as in human interest versus straight news story) ◇
- 12.33_{10,11} continue to determine point of view in expository text (e.g., objective versus subjective, first/second/third person, omniscient versus episodic) ◇
- 12.34_{8,9,10,11} interpret persuasive language and techniques (e.g., authority of speaker, special interest bias, propaganda in advertising) ◇
- 12.35_{5,6,8,9,10,11} interpret various literary devices and techniques, in particular, figurative language (e.g., personification, archetypes, allegorical patterns) ◇
- 12.36_{3,4,5,6,8,9,11} continue to practice different reading strategies, in particular, skimming for overall understanding and scanning for keywords and ideas (e.g., yellow pages, classified job ads, headline of a newspaper) ◇

Reading Vocabulary

- 12.37_{2,3,4,5,6,7,8,9,10,11} select vocabulary that is vivid, precise, and economical for oral and written communication including real life situations, using a variety of resources (e.g., personalized word bank) ◇
- 12.38_{9,10,11} expand specialized vocabulary commonly used in content areas through reading and writing in progressive levels of instructional materials ◇
- 12.39_{9,10,11} use words to function as

different parts of speech in oral and written communication including daily situations (e.g., my wants exceed my reach [noun]; I can reach [verb] any goal) ◇

12.40_{2,3,4,5,6,7,8,9,10,11} internalize the multiple meanings of words in the context of oral and written communication including daily situations (e.g., short story, speech, conversation) ◇

12.41_{2,3,4,5,6,7,8,9,10,11} apply the concepts of antonyms, synonyms, homonyms, homophones, and homographs ◇

Writing

12.42 use writing strategies to develop text to address specific writing purposes to include, but not be limited to, narrative, informative, persuasive, research, and creative works ◇

12.43 write a short piece of text to multiple audiences (e.g., peers, teachers, general public) ◇

12.44 use a writing prompt to illustrate various points of view (e.g., limited or omniscient) ◇

12.45 identify and use rhetorical devices (e.g., parallel structure, antithesis, an appeal to emotion) ◇

12.46 identify and correct types of fallacious reasoning (e.g., red herring, circular reasoning, either/or reasoning) ◇

12.47 develop a personal writing with appropriate style voice direction, and sentencing ◇

12.48 use more subtle forms of transition in a composition (e.g., sentence links, repetition of key words or sentences) ◇

12.49 select various types of quotations and use them correctly in writing (e.g., prose, poetry, drama) ◇

12.50 write an analysis of a poem, short story, novel, or drama using terminology and characteristics of the genre ◇

12.51 write and send a letter of

application with a resume ◇

12.52 produce a persuasive research paper following a style sheet (MLA, APA, or teacher generated) or a senior project ◇

12.53 demonstrate competence in word processing and desktop publishing in the publication of written text

12.54_{4,7,10} produce written text in which errors in standard written English usage and mechanics (punctuation, spelling, capitalization) do not occur

12.55 use electronic editing and traditional editing strategies (e.g., symbols, dictionaries) to correct spelling errors (e.g., proper names, in/inn [homonyms])

Spelling

12.56 recognize and understand the social, cultural, technical/media influences on the evolution of word origins (e.g., from technology, mythology, foreign languages) ◇

12.57 apply rules to the spelling and pronunciation of affixes (prefixes and suffixes in communications, both academic and real life (e.g., numeric [mono-, bi-, tri-]; negation [non-, un-]; degrees of comparison [-er, -est, -less]; directional [trans-, inter-, intra-]) ◇

12.58 expand pronunciation and spelling skills to include specialized vocabulary commonly used in content areas (e.g., algae) ◇

12.59— apply rules to the pronunciation and spelling of homophonic consonant and vowel sounds in communications both academic and real life (e.g., context clues; editing process; phonetic principles “ph” for “f”; “ee” for “ea”) ◇

12.60 apply rules to the pronunciation and spelling of inflectional endings in communications both academic and daily (e.g., -tion, -

- ly, -ing) ◇
- 12.61 will use a variety of resources and strategies to ensure choices of pronunciation and spelling (e.g., spell check, thesaurus) ◇

Language

- 12.62^{1,2,3,4,5,6,7,8,9,10,11} use capitalization rules to generate sentences containing correct capitalization of proper/common nouns, proper adjectives, direction as region, and titles of people (e.g., students generate incorrect sentences to be corrected by peers) ◇
- 12.63^{3,4,5,6,7,8,9,10,11} use punctuation rules to recognize and correct sentences with errors in use of commas as interrupters, apostrophes with possessives; quotation marks with dialogue; colons with lists; semicolons between independent clauses, and commas with appositives (e.g., in a student generated composition which includes usage of all these skill areas, peers identify and edit errors, where necessary) ◇
- 12.64^{1,2,3,4,5,7,8,9,10,11} verb tense by recognizing appropriate situations for tense shifts (e.g., rewrite a paragraph/composition to illustrate correct tense shift) ◇
- 12.65^{7,8,10,11} recognize and correct errors in subject/verb agreement with emphasis on indefinite pronouns (e.g., take a composition, substitute a variety of indefinite pronouns for a variety of nouns functioning as subjects and change verbs, where appropriate, to agree) ◇
- 12.66^{8,9} correct errors in parallel structure in paragraphs and compositions (e.g., student work, newspaper articles, editorials) ◇
- 12.67^{5,6,7,8,9} correct errors in redundancy in paragraphs and compositions (e.g., student work, newspaper articles, editorials) ◇
- 12.68^{7,8,9} correct errors of misplaced modifiers in sentences,

paragraphs, and essays paragraphs (e.g., advertisements, student essays, articles) ◇

- 12.69^{2,3,4,5,6,7,8,9} recognize the specific audience for whom a piece of writing has been generated (e.g., letter of job application/scholarship application, essay, personal letter) ◇
- 12.70^{1,2,3,5,6,7,8,11} use content and organizational strategies to identify supporting sentences and paragraphs (e.g., example/illustration, personal anecdote, extended definition, analogy) ◇
- 12.71^{7,8,9,10,11} use content and organizational strategies to identify transitional devices (e.g., repetition of keywords and sentences; sentence links, in particular relationships in contrast, cause-effect, time, and person/place/thing relationships) ◇
- 12.72^{3,4,5,6,7,9,11} use content and organizational strategies to identify and use topic sentences and thesis statements (e.g., placement, figurative or literal, singular or multiple focus, implied versus stated) ◇
- 12.73^{7,8,10,11} recognize descriptive language (e.g., connotation, repetition, sensory language [imagery], figurative language [personification, metaphor, apostrophe], symbolism, musical effect) ◇

Study Skills

- 12.74 develop a sound notetaking skill that can be applied to classroom, library, interview, and other life circumstances ◇
- 12.75^{8,9,10,11} know and understand the role and function of the library/media center including II electronic retrieval systems (e.g., CD Rom)
- 12.76 know and understand the use

- of the Reader's Guide and card catalog, encyclopedia, Internet ◇
- 12.77 know and understand the use of cross referencing while gathering information for a research topic ◇
- 12.78 apply copyright and plagiarism laws in the editing process ◇
- 12.79 judge the reliability of sources for bias and authority ◇
- 12.80_{9,10,11} use guide words to locate a dictionary entry and identify the best definition for the word's context ◇
- 12.81_{9,10,11} demonstrate the ability to use a variety of reference sources (e.g., thesaurus, Bartlett's Familiar Quotations, atlas, almanac, specialized dictionaries, and the glossaries) ◇
- 12.82 understand and follow a style sheet (e.g., MLA, APA, teacher-generated) ◇
- 12.83_{9,10,11} collect and organize information through systematic note taking and outlining ◇
- 12.84 use available primary sources when gathering information, taking into consideration the motives and perspective of those sources ◇
- 12.85 consult various career information sources (e.g., Occupational Outlooks Handbook, community resources, college/training center catalogs) ◇
- 12.86 applies the necessary research skills in the production of a senior project or a persuasive research paper ◇
- 12.87 set goals for learning beyond high school ◇

Computer/Technology

- 12.88 use appropriate software to practice and master twelfth grade English language arts instructional objectives
- 12.89 use a variety of audiovisual and multimedia materials to practice and master twelfth grade English language arts instructional objectives
- 12.90 using a word processor, demonstrate correct keying, editing, and formatting techniques
- 12.91 use appropriate software to practice and master the five step writing process including prewriting, drafting, editing, revising, and publishing
- 12.92 use appropriate software to practice and master desktop publishing incorporating text, graphics, and various fonts in a variety of formats
- 12.93 select and use appropriate technologies to locate and use reference sources
- 12.94 use graphic software to organize, analyze and present information
- 12.95 select and use appropriate technologies to create and deliver presentations
- 12.96 use simulation software for investigating open-ended problems, formatting questions, and extending problem solving situations
- 12.97 use simulation software to practice critical thinking and decision making

Adolescent Mathematics Education

The mathematics program represents a core curriculum from which students will select at least three, and preferably four, courses for mathematics credit toward high school graduation.

Required Courses

Algebra I or Applied Math I and II

Elective Courses

Applied Mathematics I*
 Applied Mathematics II*
 Geometry and Applied Geometry*
 Algebra II*
 Trigonometry
 Probability and Statistics
 Pre-Calculus
 Discrete Mathematics
 Algebra/Geometry Preparation
 Algebra Support
 AP Courses
 College Courses

*Required to be offered

Schools must offer four courses in mathematics at a level above Algebra I. It is strongly recommended that students in Advanced Placement mathematics courses take the AP exam.

Credit for Algebra I may be granted through two paths: successful completion of Algebra I or successful completion of Applied Mathematics I and Applied Mathematics II. The Algebra/Geometry Preparation course is designed to allow students the opportunity to acquire the mathematical maturity necessary to proceed to Algebra I or Applied Mathematics I. Algebra support is an elective course designed for students who have completed Algebra I or Applied Math I and II, but have not demonstrated mastery on an Algebra I end-of course exam. The Algebra Support class may be taken concurrently with Geometry and Applied Geometry. Elective credit will be given for the Algebra Support class and the Algebra/Geometry Preparation class. The Algebra Support Class may not be used to fulfill the three mathematics credits required for graduation.

An integrated mathematics program is an alternative method of delivery if the integrity of the course objectives as defined in this document is maintained. The objectives specified in this document offer a challenging and rewarding curriculum for all students.

County school systems or individual high schools may opt to offer additional mathematics courses. Instructional goals and objectives must be developed for these courses and approved by the county board of education.

Applied Mathematics I

Applied Mathematics I and Applied Mathematics II reflect the content of a complete course in Applied Mathematics. Applied Mathematics I is the first half of the Applied Mathematics course. One Applied Mathematics credit will be given for successful completion of this course. Upon successful completion of both courses and the demonstration of competency, Algebra I credit will be given. Applied Mathematics I is a lab based course taught with teacher-led, concrete activities. This course is designed to develop algebraic concepts applicable in the work place as well as in traditional areas.

- AM1.1 use a scientific calculator to perform the basic operations of whole numbers, fractions, and decimals ◇
- AM1.2 estimate using both a rough estimate and truncating before solving a problem involving computation ◇
- AM1.3 write numbers in scientific notation and combine numbers written in scientific notation to solve problems
- AM1.4 distinguish between counting and measuring using precision tools to make measurements
- AM1.5 solve problems and interpret results using signed numbers and vectors
- AM1.6_{9,10,11} **simplify numerical expressions and evaluate algebraic expressions using grouping symbols and order of operations**
- AM1.7_{9,10,11} **translate word phrases into algebraic expressions or word sentences into equations and inequalities**
- AM1.8 justify steps in the simplification of expressions and the solving of equations based on the properties of real numbers
- AM1.9_{9,10,11} **solve literal equations (i.e. formulas) for a given variable and apply the skills toward solving practical problems**
- AM1.10_{9,10,11} **represent problems**

and solve linear algebraic equations and inequalities using a four step problem solving approach

- AM1.11_{9,10,11} **collect, organize, and interpret data using graphs, charts, and tables** ◇
- AM1.12 solve absolute value equations in one variable and interpret the results on the number line
- AM1.13 use the laws of exponents to perform operations on expressions with integral exponents
- AM1.14_{9,10,11} **estimate and simplify square roots**

Computer and Technology

- AM1.15 use appropriate software to practice and master Applied Mathematics I instructional objectives ◇
- AM1.16 use a scientific calculator to perform basic operations with whole numbers, fractions, and decimals (AM1.1)
- AM1.17 use graphic software to create graphs, charts, and tables from given data. (AM1.11) ◇
- AM1.18 use a spreadsheet to solve linear equations ◇
- AM1.19 use an integrated software package to develop a formula table, a measurement table, and an equality table ◇

Applied Mathematics II

Applied Mathematics II is the second half of the Applied Mathematics course. Upon successful completion of both courses, Algebra I credit will be given. Algebraic concepts will be taught using laboratory activities based on several strategies that include the use of the graphing calculator. Working in groups will be used to develop problem solving skills and social skills needed in the work place as well as in traditional areas.

- AM2.1_{9,10,11} **factor polynomials by applying various methods**
- AM2.2 **add, subtract, multiply, and divide polynomials**
- AM2.3_{9,10,11} **determine the slope of a line given an equation of the line, the graph of the line, two points on the line, or information that allows two points to be identified. Applications, such as graph interpretation, will be utilized**
- AM2.4 **graph linear equations by identifying and applying an appropriate technique-methods include slope intercept, point-slope, and x and y intercept**
- AM2.5_{9,10,11} **write an equation of a line using sufficient given information such as the graph of a line, two points on the line, the slope and a point, or the slope and y intercept**
- AM2.6_{9,10,11} **analyze a given set of data for the existence of a pattern, represent the pattern algebraically and graphically, determine the domain and range, and determine if the relation is a function** ◇
- AM2.7_{9,10,11} **solve quadratic equations by graphing, by factoring, and by the quadratic formula** ◇
- AM2.8 **solve systems of linear equations graphically and by multiple algebraic methods, such as elimination and substitution with application**
- AM2.9 **add, subtract, multiply, and divide rational expressions**
- AM2.10_{9,10,11} **collect, organize, interpret data, and predict outcomes using the mean, mode, median, range, and standard deviation**
- AM2.11_{9,10,11} **predict the outcomes of simple events using the rules of probability**
- AM2.12 **load and use single spreadsheet template to solve practical problems** ◇
- AM2.13_{9,10,11} **use process charts and histograms, run charts, scatter diagrams, and normal distribution curves in order to perform statistical process (quality) control** ◇

Computer and Technology

- AM2.14 **use appropriate software to practice and master Applied Mathematics II instructional objectives** ◇
- AM2.15 **use a graphing calculator to determine the slope of a line, the graph of a line, two points on the line, or identification of those two points (AM2.3 and AM2.4)**
- AM2.16 **use a graphing calculator to graph linear equations given slope-intercept, point-slope, and x and y intercept (AM2.4)**
- AM2.17 **use a graphing calculator to solve quadratic equations (AM2.7)**
- AM2.18 **use graphing software to create graphs, charts, histograms, and tables of given data; to find frequency distribution and standard deviation (AM2.10)** ◇
- AM2.19 **use graphing software to create process charts and histograms, run charts, scatter diagrams, and distribution curves**

(AM2.13) ◇

AM2.20 use spreadsheet software
to solve given problems.
(AM2.12) ◇

Algebra I

Algebra I is a course that provides the gateway to all higher mathematics courses. This course uses a conceptual approach to mathematics and does not focus on algorithmic methods. Algebraic representations will be used to generalize, and the algebraic method will be viewed as a problem solving tool. In planning for instruction, consideration should be given to the student's readiness for abstract concepts. Manipulatives, such as algebra tiles, should be used to bridge the gap from the concrete to the abstract. Available technology such as calculators, computers, and graphing utilities are to be used as tools to enhance learning.

Al.1_{9,10,11} simplify numerical expressions and evaluate algebraic expressions using grouping symbols and order of operations Al.2_{9,10,11} translate word phrases into algebraic expressions and word sentences into equations or inequalities ◇ Al.3 justify steps in the simplification of expressions and in the solving of equations based on the properties of real numbers ◇ Al.4_{9,10,11} solve multi-step linear equations and inequalities in one variable and apply the skills toward solving practical problems ◇ Al.5_{9,10,11} solve literal equations (i.e. formulas) for a given variable and apply the skills toward solving practical problems and better equip students for calculator usage ◇ Al.6_{9,10,11} analyze a given set of data for the existence of a pattern, represent the pattern algebraically and graphically, determine the domain and range, and determine if the relation is a function ◇ Al.7 solve absolute value equations in one variable and interpret the results on a number line. Al.8 use the laws of exponents to perform operations on expressions with integral	exponents Al.9_{9,10,11} determine the slope of a line given an equation of the line, the graph of the line, or the information that allows two points to be identified. Appropriate applications, such as graph interpretation, will be utilized ◇ Al.10 graph linear equations by identifying and applying an appropriate technique--methods include slope intercept, point slope, and x and y intercept Al.11_{9,10,11} write an equation of a line using sufficient given information such as the graph of a line, two points on the line, the slope and a point, or the slope and the y intercept Al.12 solve systems of linear equations graphically and by multiple algebraic methods, such as elimination and substitution Al.13 add, subtract, multiply, and divide polynomials Al.14 factor polynomials by applying various methods Al.15 solve quadratic equations by graphing, factoring, and by the quadratic formula Al.16 add, subtract, multiply, and divide rational expressions Al.17_{9,10,11} identify the effects of parameter changes on a function ◇ Al.18_{9,10,11} solve equations

quadratic formula
 AI.16 add, subtract, multiply, and divide
 rational expressions

AI.17_{9,10,11} **identify the effects of
 parameter changes on a
 function** ◇

AI.18_{9,10,11} **solve equations
 containing radicals**

AI.19_{9,10,11} **solve inequalities**

Computer and Technology

AI.20 use appropriate software to

practice and master Algebra I
 instructional objectives

AI.21 use a graphing calculator to solve
 linear equations and to graph
 linear equations (AI1.5 and
 AI1.10)

AI.22 use a graphing calculator to
 determine the slope of a line
 (AI1.9)

AI.23 use a graphing calculator to solve
 quadratic equations. (AI1.15)

Geometry and Applied Geometry

Geometry is a course designed for students who have successfully completed the objectives for Algebra I. The study of geometry should include experiences and activities that foster in students a feeling for the value of geometry in their lives. Students should be encouraged to develop conjectures by inductive processes using manipulatives and computer software such as Geometer's Sketchpad. Cooperative learning groups are particularly effective in allowing students to become proficient in analyzing conjectures and in formulating proofs. Emphasis should be placed on applications to the work place and everyday life and on connections to other branches of mathematics and other disciplines.

Applied Geometry is a course for students who have successfully completed the objectives of Algebra I. Upon completion of this course a geometry credit will be given. Applied Geometry will use manipulatives to enhance the understanding of geometric concepts and terminology. Working in groups will allow students to analyze applications of geometry in their lives and in the work place. Concepts will be taught using laboratory activities including the use of tools such as the graphing calculator and the Geometer's Sketchpad. The objectives for Applied Geometry will be the same as those for Geometry.

G.1 represent points, lines, and
 planes pictorially with proper
 identification, as well as basic
 concepts derived from these
 undefined terms, such as
 segments, rays, and angles

G.2 differentiate between inductive
 and deductive reasoning ◇

G.3 use the basic concepts of
 symbolic logic including
 identifying the converse, inverse,
 and contrapositive of a
 conditional statement and testing
 the validity of conclusions with
 Venn diagrams ◇

G.4 construct logical arguments using
 various formats with emphasis on

paragraph form, flow proofs, and
 indirect approaches ◇

G.5 apply definitions, theorems, and
 postulates related to such topics
 as complementary,
 supplementary, and vertical
 angles perpendicular and parallel
 line in geometric proofs, in
 algebraic problems, and in
 practical applications

G.6_{10,11} **explore the relationship
 between angles formed by two
 lines cut by a transversal when
 lines are and are not parallel,
 and use the results to develop
 methods to show parallelism**

G.7 investigate and verify congruence

- relationships in triangles
- G.8_{9,10,11} explore and identify properties of quadrilaterals and verify properties for parallelogram, rectangle, rhombus, square, and trapezoid
- G.9 investigate measures of angles and lengths of segments to determine the existence of triangles (triangle inequality) and the order of sides and angles
- G.10_{9,10,11} apply properties of similar triangles to determine inaccessible heights and distances, construct scaled drawings, and derive the basis for the trigonometric ratios
- G.11_{9,10,11} using trigonometric ratios, determine lengths of sides and measures of angles in right triangles
- G.12_{10,11} apply the Pythagorean Theorem and its converse in solving practical problems and in deriving the special right triangle relationships
- G.13 investigate measures of angles and the relationship to the arcs of a circle
- G.14_{9,10,11} discover the measures of angles of a polygon and connect the results to tessellating pattern ◇
- G.15_{9,10,11} discover the lengths of sides of polygons from given data ◇
- G.16₉ develop and apply formulas for area, perimeter, surface area, and volume and apply them in the modeling of practical problems ◇
- G.17_{9,10,11} develop and apply basic concepts of analytical geometry such as formulas for distance, slope, and midpoint ◇
- G.18 construct by Euclidean methods a triangle's medians, altitudes, angle bisectors, and perpendicular bisectors and make conjectures about their relationships
- G.19_{9,10,11} recognize terminology associated with transformational geometry. Given a figure, create a reflection, translation, rotation, glide reflection or dilation of that figure
- G.20 compare and contrast other geometries to Euclidean geometry
- G.21_{9,10,11} find the area of a closed figure inscribed within another closed figure
- G.22_{9,10,11} using the Cartesian Coordinate system, find the dimensions of a polygon, given the coordinates of the polygon
- Computer and Technology**
- G.23 use appropriate software to practice and master Geometry and Applied Geometry instructional objectives ◇
- G.24 use a calculator to perform operations on whole numbers, fractions, and decimals

Algebra II

Listed below are the objectives for Algebra II. It is an underlying assumption that a mastery of Algebra I has been achieved since Algebra II continues the study of concepts introduced in Algebra I. Graphing calculators are an integral part of instruction in the Algebra II objectives. Students will have the opportunity to make conjectures and test them by using any graphing utility. Manipulatives and other available technology should be used as appropriate.

- A2.1 continue to identify and formalize the justification of the use of the field properties, axioms of equality and inequality, and properties of order that are valid for the set of real numbers,

- complex numbers, and matrices
- A2.2_{9,10,11} continue to review the concept of slope of a line, write equations of lines given various information, and graph linear equations. Graphing calculators will be used as a teaching aid ◇
- A2.3_{9,10,11} continue to factor polynomials by applying various methods of factoring including the sum and difference of two cubes
- A2.4_{9,10,11} solve and graph the solution of a linear inequality and systems of linear inequalities in two variables. Graphing calculators will be used to enhance the solving and confirming of solutions
- A2.5 perform operations with complex numbers and give answers in simplest form
- A2.6_{9,10,11} simplify radicals and expressions involving fractional exponents and convert between the two forms
- A2.7 use the complex number system to define i and $a+bi$, and simplify powers and products of i
- A2.8 solve a quadratic equation over the set of complex numbers by selecting and applying factoring, graphing, the quadratic formula or completing the square. Use the discriminant to determine the nature of the roots. Graphing calculators will be used for solving and/or confirming solutions
- A2.9 perform basic matrix operations and solve a system of linear equations using the inverse matrix method. Graphing calculators will be used to perform the calculations
- A2.10_{9,10,11} solve equations containing radicals and exponents
- A2.11_{9,10,11} recognize linear, quadratic, absolute value, step, and exponential functions. Convert between a graph, table and an equation
- A2.12_{9,10,11} find the domain, range, zeros, and inverse of a function, the value of a function for a given element in its domain, and the composition of multiple functions
- A2.13_{9,10,11} graph quadratic functions, solve problems using quadratic equations, and solve quadratic inequalities
- A2.14_{9,10,11} find the maximum and minimum values of a function over a region using linear programming techniques ◇
- A2.15 solve problems involving direct, inverse, and joint variation. Applications to practical problems will be investigated
- A2.16 recognize, identify, and sketch the graphs of a parabola, circle, ellipse, and hyperbola. Graphing calculators will be used as a teaching aid ◇
- A2.17 solve absolute value equations and inequalities graphically and algebraically. Graphing calculators will be used as a primary method of solution and to verify algebraic solutions ◇
- A2.18 define a logarithmic function, transform equations from exponential form into logarithmic form, and apply the basic properties of logarithms to simplify or expand an expression
- A2.19_{9,10,11} solve problems using non-routine strategies ◇

Computer and Technology

- A2.20 use appropriate software to practice and master Algebra II instructional objectives ◇
- A2.21 use graphing software to explore, analyze, and display algebraic relationships ◇
- A2.22 use a graphing calculator to graph linear equations (A2.2 and A2.9)
- A2.23 use a graphing calculator to graph linear inequalities and systems of inequalities with two variables (A2.4)
- A2.24 use a graphing calculator to graph quadratic functions, and to

- solve quadratic equations and inequalities (A2.8 and A2.13)
- A2.25 use a graphing calculator to investigate functions (A2.12)
- A2.26 use a graphing calculator to find the maximum and minimum values of a function over a region (A2.14)
- A2.27 use a graphing calculator to graph a parabola, circle, ellipse, and hyperbola (A2.16)
- A2.28 use a graphing calculator to solve absolute value equations and inequalities (A2.17)

Trigonometry

Trigonometry is designed for students who have successfully completed Algebra II. Connections between right triangle trigonometry and circular functions should be emphasized. Graphing utilities such as calculators and computers will be used to enhance student learning and to aid in finding the values of trigonometric functions and their inverses.

- T.1 define the six trigonometric functions in terms of a right triangle and find the values of the functions of an angle in standard position, given a point on the terminal side of the angle. Circular function definitions will be connected with trigonometric function definitions
- T.2 find the values of the other trigonometric functions, given the value of one trigonometric function
- T.3 develop recall of the values of the six trigonometric functions of special angles as related to the unit circle
- T.4 use a calculator to find the values of the trigonometric functions for any angle and to find the measure of an angle given the value of one of its trigonometric functions
- T.5 convert angle measures from radians to degrees and vice versa
- T.6 verify trigonometric identities by making substitutions and recalling basic identities ◇
- T.7 solve trigonometric equations that include both infinite solutions and solutions with a restricted domain
- T.8 find the value of inverse trigonometric functions
- T.9 find the area of a triangle given the measures of two sides and the included angle or the measures of three sides (Heron's formula)
- T.10 express complex numbers in polar form and perform operations. This will include adding, subtracting, multiplying, and dividing complex numbers in polar form, evaluating powers of complex numbers using De Moivre's Theorem, and finding the roots of a complex number
- T.11^{9,10,11} solve practical problems involving triangles using the trigonometric functions, the Pythagorean Theorem, the Law of Sines, and the Law of Cosines
- T.12 recognize the graph of the six trigonometric functions. Given an equation in the form $y = A \sin(Bx + C) + D$, the student will identify the domain and range, determine the period, phase shift, amplitude and vertical shift, and sketch at least one period of the graph. The graphing calculator will be used to investigate how A, B, C, and D affect the graph of the function ◇
- T.13 recognize and graph the inverse of trigonometric functions. Restrictions on the domain will be included
- T.14 develop and use formulas such as sum or difference of two angles, double-angle, and half-

angle

Computer and Technology

- T.15 use appropriate software to practice and master trigonometric instructional objectives ◇
- T.16 use a scientific calculator to find the values of the trigonometric functions for an angle, and the measure of an angle given its trigonometric functions (T.4)
- T.17 use a scientific calculator to convert angle measures from radius to degrees and vice versa (T.5)

- T.18 use a scientific calculator to find the value of inverse trigonometric functions (T.8)
- T.19 use a scientific calculator to solve practical problems involving triangles (T.9)
- T.20 given an equation in the form $y = A \sin(Bx + C) + D$, use a graphing calculator to investigate how A , B , C , and D effect the graph of a function (T.12)
- T.21 use a graphing calculator to graph the inverse of a trigonometric function (T.13)

Probability and Statistics

Probability and Statistics is one of the most important branches of the mathematical sciences. Knowledge of these topics is critical to decision making and to the analysis of data. Using concepts of probability and statistics, individuals are able to predict the likelihood of an event occurring, organize and evaluate data, and identify the significance of statements. Connections between content and applications to the students' world will be emphasized. Prerequisites for this course are successful completion of Algebra II and Geometry.

- PS.1 distinguish between experimental and theoretical probability
- PS.2_{9,10,11} create and interpret data using various methods of displaying numerical data, including frequency distributions, circle graphs, histograms, and frequency curves, and make predictions about outliers ◇
- PS.3 determine possible outcomes using tree diagrams and the counting principles of permutations and combinations
- PS.4_{9,10,11} express the chances of events occurring either in terms of a probability or odds
- PS.5_{9,10,11} use the normal distribution and the binomial distribution including Pascal's triangle, to determine probability of events
- PS.6_{9,10,11} interpret and calculate measures of central tendency (mean, median, and mode) from data presented in a variety of forms such as charts, tables, and graphs or from data created through experimentation ◇
- PS.7_{9,10,11} interpret and calculate measures of dispersions (range and standard deviation) from data presented in a variety of forms such as charts, tables and graphs or from data created through experimentation ◇
- PS.8 describe individual performances in terms of percentiles, z-scores, and t-scores
- PS.9 describe the role of sampling, randomness, bias, and sample size in data collection and interpretation
- PS.10 explain and illustrate the use and misuse of statistics ◇
- PS.11 test the validity of a hypothesis using appropriate statistical concepts ◇
- PS.12_{9,10,11} determine the correlation values for given data or for data generated by students

and use the results to describe the association of the variables within the given data. Identify whether this association is systematic or predictable ◇

PS.13 calculate the Chi-Square values for a given population

PS.14 perform a t-test for a designated set of data, and use the results to test the validity of a hypothesis

PS.15_{9,10,11} perform a regression analysis on a set of data, either given or created through experimentation, and use the results to predict specific values of a variable. Identify the equation for the line of regression for a scattergram

PS.16 perform an analysis of variance (ANOVA) and interpret the results

PS.17_{9,10,11} make a prediction based upon a statistical sample ◇

PS.18_{9,10,11} make a statistical conclusion based on information in a chart or table ◇

Computer and Technology

PS.19 use appropriate software to

practice and master Probability and Statistics instructional objectives ◇

PS.20 use graphing software to create frequency distribution charts, graphs, histograms, and frequency curves (PS.2) ◇

PS.21 use spreadsheets to calculate central tendency, frequency distribution and standard deviation from given data (PS.6) ◇

PS.22 use a calculator to find measures of dispersions (PS.7)

PS.23 use a calculator to find the Chi-Square values for a given population (PS.13)

PS.24 use a calculator to perform the t-test on a given set of data (PS.14)

PS.25 use a calculator to perform a regression analysis on a set of data (PS.15)

PS.26 use a calculator to perform an analysis of variance (ANOVA) (PS.16)

Pre-Calculus

Pre-Calculus is intended for students who have mastered the concepts of Algebra II. It will extend students' knowledge of functions as well as provide appropriate preparation for a calculus course. Available technology will be used by students and teachers to enhance learning. Graphing utilities are powerful tools for solving and verifying equations and inequalities. They also aid in investigating functions and their inverses.

PC.1 investigate and identify the characteristics of polynomials and rational functions and use these to sketch the graphs of the functions. These characteristics include zeros, upper and lower bounds, y-intercepts, symmetry, asymptotes, and maximum and minimum points. Graphing calculators will be used to verify these characteristics ◇

PC.2 solve higher order polynomial equations utilizing techniques such as Descartes' Rule of Signs, upper and lower bounds, and

Rational Root Theorem

PC.3 perform mathematical operations on complex numbers and graph complex numbers

PC.4 expand binomials with positive integral exponents by the use of Pascal's triangle and the Binomial Theorem

PC.5 establish the relationship between exponential and logarithmic functions and graph the functions. Graphing calculators will be used to investigate the characteristics ◇

PC.6 perform calculations involving

- exponential and logarithmic expressions to solve equations and practical problems. This will include natural and common logarithms, laws of exponents and logarithms, and the solution of logarithmic and exponential equations
- PC.7 recognize and use properties of matrices to solve practical problems
- PC.8_{9,10,11} **solve problems involving the sum of finite and infinite sequences and series. Sigma (summation) notation will be included**
- PC.9 find the limit of a function, a sequence, or a series by intuitive reasoning, algebraic methods, and numerical substitution
- PC.10 use properties of parallel and perpendicular lines to analyze systems of equations ◇
- PC.11 perform mathematical operations with vectors and use vectors to solve practical problems. This will include addition, subtraction, scalar multiplication, inner (dot) product, norm (magnitude) of a vector, unit vector, graphing, perpendicular components, and cross products
- PC.12 apply the method of mathematical induction to prove formulas and statements ◇
- PC.13 use graphs to investigate and describe the continuity of functions. The functions will include rational, piece-wise defined, and step functions. Graphing calculators will be used to investigate and verify the graphs ◇

- PC.14 graph functions and conic sections using translation and rotation of axes. Graphing calculators will be used to investigate and verify the graphs

◇

- PC.15_{9,10,11} **estimate the area under a curve**

Computer and Technology

- PC.16 use appropriate software to practice and master Pre-Calculus instructional objectives ◇
- PC.17 use a graphing calculator to graph the functions of polynomials and rational functions (PC.1)
- PC.18 use a graphing calculator to graph complex numbers (PC.3)
- PC.19 use a graphing calculator to graph exponential and logarithmic functions (PC.5)
- PC.20 use a calculator to solve equations with exponential and logarithmic expressions (PC.6)
- PC.21 use a graphing calculator to perform operations with vectors and use vectors to solve problems (PC.11)
- PC.22 use a graphing calculator to investigate the continuity of functions (PC.13)
- PC.23 use a graphing calculator to graph functions of conic sections (PC.14)

Discrete Mathematics

Discrete mathematics is an advanced course which may be an alternative to pre-calculus, trigonometry, or calculus. The emphasis will be placed on learning and creating algorithms to perform certain computations or to process information within a discrete (finite) set. Counting, optimization, recursively defined functions, modeling situations with graphs, arranging objects, sequences, and series are a few of the topics that will be explored. As the use of computers (a discrete machine) continues to increase, so will the expansion and importance of discrete mathematics.

DM.1	analyze and evaluate graphs made of vertices and edges that model real world problems ◇	DM.12	create and use matrices. Explain the connection between graphs and matrices
DM.2	define, use, and differentiate such concepts as Eulerian path, Eulerian circuit, Hamiltonian path, Hamiltonian circuit, and isomorphism	DM.13	perform basic operations on matrices and apply to real world applications
DM.3	define and use algorithms, such as breadth-first, depth-first, minimum spanning tree algorithm, the shortest path, and the four color conjecture to solve problems ◇	DM.14	distinguish between convergent and divergent sequences and series
DM.4	understand and apply graph coloring to real situations, such as scheduling ◇	DM.15 ^{9,10,11}	use recurrence relations to solve problems
DM.5 ^{9,10,11}	find the number of possible ways independent objects from a given set may be selected or find the number of ways events may occur	DM.16	construct fractals using a recursive process (use calculator or computer)
DM.6	analyze and evaluate situations where elements are ordered or repeated	DM.17	identify and explain the characteristics of self-similarity (symmetry of scale)
DM.7	differentiate between random and ordered selections and apply these concepts in a variety of settings	DM.18	explain the characteristics of a fractal
DM.8 ^{9,10,11}	calculate the probability of a given event occurring	Computer and Technology	
DM.9	solve problems by applying the exclusion-inclusion principle, pigeonhole, and catalan numbers	DM.19	use appropriate software to practice and master Discrete Mathematics instructional objectives ◇
DM.10	recognize types of codes, including error-correcting codes, and apply decoding techniques	DM.20	use software for analyzing and evaluating graphs made of vertices and edges that model real world problems (DM.1) ◇
DM.11	define and identify various number and geometric patterns (including tessellations), symmetries, and apply to real world settings	DM.21	using spreadsheets, create, analyze, and use matrices ◇
		DM.22	use graphing software, apply graph coloring to real world situations (DM.4) ◇
		DM.23	perform basic operations on matrices and apply to real world use (DM.13) ◇
		DM.24	use fractal construction software, create fractals using a recursive process (DM.17) ◇
		DM.25	using fractal created, identify and explain characteristics of

symmetry of scale. (DM.18)

Algebra/Geometry Preparation

Algebra/Geometry preparation is an elective course designed to be a bridge between the concrete elementary curriculum and the more formal mathematics curriculum ahead. In this course students will explore algebraic concepts in an informal way to build a foundation for subsequent formal study of algebra. Such informal explorations should emphasize physical models, data, graphs, and other mathematical representations rather than facility with formal algebraic manipulations. The study of geometry is to assist students to represent and make sense of the world. Geometric models will provide a perspective from which students are to analyze and solve problems, and geometric interpretations are to help make abstract representations more easily understood. The study of geometry at this level should simply provide increased opportunities for students to engage in more systematic explorations.

- AGP.1 identify and use properties of numbers (commutative, associative, distributive, etc)
- AGP.2 add, subtract, multiply, and divide decimals, integers, fractions and mixed numbers
- AGP.3 use order relations to compare, order, or locate whole numbers, integers, fractions, and decimals on a number line
- AGP.4_{9,10,11} **read, interpret, and construct graphs to solve problems.**
- AGP.5_{9,10,11} **use data to determine mean, median, mode, and range**
- AGP.6_{9,10,11} **find the probability of complementary events and exclusive events**
- AGP.7 estimate, measure, and perform operations involving length, mass, and capacity using customary and metric units
- AGP.8 use a protractor to measure and draw angles
- AGP.9 use a compass to construct congruent angles, bisect angles, and bisect line segments
- AGP.10_{9,10,11} **estimate and find circumference and area of a circle**
- AGP.11_{9,10,11} **estimate and find the area and perimeter of polygons**
- AGP.12_{9,10,11} **estimate and find the surface area and the volume of three dimensional figures**
- AGP.13 identify angle relationships: complementary, supplementary, vertical, and adjacent
- AGP.14_{9,10,11} **identify angle relationships; involving parallel lines and apply in solving problems (corresponding angles, alternate interior angles, and alternate exterior angles)**
- AGP.15_{9,10,11} **investigate similar triangles and apply proportions in problem solving situations**
- AGP.16_{9,10,11} develop and explore circle relationships, emphasizing the vocabulary of circles.
- AGP.17_{9,10,11} **substitute values, evaluate expressions involving variables, and calculate formulas to solve application problems**
- AGP.18_{9,10,11} **solve equations with at least two operations**

Computer and Technology

- AGP.19 use appropriate software to practice and master Algebra/Geometry Preparation instructional objectives ◇
- AGP.20 use a spreadsheet to determine mean, median, mode, and range of a selected group of data (AGP.5) ◇
- AGP.21 use a calculator to find the probability of complementary and exclusive events (AGP.6)
- AGP.22 use a calculator to find the

circumference of a circle
(AGP.10)
AGP.23 use a calculator to find the
area and perimeter of a polygon
(AGP.11)
AGP.24 use a calculator to find the
volume of a three dimensional

figure (AGP.12)
AGP.25 use a calculator to find the
value of an expression (AGP.17)
AGP.26 use a calculator to solve an
equation with at least two
operations (AGP.18)

Advanced Placement (AP) Calculus

Calculus AB is an Advanced Placement curriculum in elementary functions and calculus for students who have successfully completed Pre-Calculus. The major topics include differential and integral calculus. Calculus BC is an intensive course in the calculus of functions for a single variable. In addition to the topics covered in Calculus AB, the BC course also includes infinite series and differential equations. Calculus AB and Calculus BC represent college-level mathematics for which most colleges grant Advanced Placement credit. The instructional objectives for these courses are outlined in the College Board Publications. It is strongly recommended that students in Advanced Placement Calculus take the AP exam.

Advanced Placement (AP) Statistics

The AP Statistics course is designed for students who have successfully completed an Algebra II course. Its purpose is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Four broad conceptual themes are emphasized: (1) exploring data: observing patterns and departures from patterns; (2) planning a study: deciding what and how to measure; (3) anticipating patterns in advance: producing models using probability and statistics; and (4) statistical inference: confirming models.

Algebra Support

Algebra support is an elective course designed for students who have completed Algebra I or Applied Mathematics I and II, but have not demonstrated mastery on an Algebra I end-of-course exam. This class should be small enough to allow for individualized instruction thus strengthening each student's weaknesses. Manipulatives and technology should be used where appropriate. A student may progress to geometry while taking this course.

Review for Assessment

Grades 9,10,11

The following instructional objectives require review prior to the administration of spring standardized tests in grades 9, 10, and 11.

Applied Mathematics I

- AM1.6_{9,10,11} simplify numerical expressions and evaluate algebraic expressions using grouping symbols and order of operations
- AM1.7_{9,10,11} translate word phrases into algebraic expressions or word sentences into equations and inequalities
- AM1.9_{9,10,11} solve literal equations (i.e. formulas) for a given variable and apply the skills toward solving practical problems
- AM1.10_{9,10,11} represent problems and solve linear algebraic equations and inequalities using a four step problem solving approach
- AM1.11_{9,10,11} collect, organize, and interpret data using graphs, charts, and tables ◇
- AM1.14_{9,10,11} estimate and simplify square roots

Applied Mathematics II

- AM2.1_{9,10,11} factor polynomials by applying various methods
- AM2.3_{9,10,11} determine the slope of a line given an equation of the line, the graph of the line, two points on the line, or information that allows two points to be identified. Applications, such as graph interpretation, will be utilized
- AM2.5_{9,10,11} write an equation of a line using sufficient given information such as the graph of a line, two points on the line, the slope and a point, or the slope and y intercept
- AM2.6_{9,10,11} analyze a given set of data for the existence of a

pattern, represent the pattern algebraically and graphically, determine the domain and range, and determine if the relation is a function ◇

- AM2.7_{9,10,11} solve quadratic equations by graphing, by factoring, and by the quadratic formula ◇
- AM2.10_{9,10,11} collect, organize, interpret data, and predict outcomes using the mean, mode, median, range, and standard deviation
- AM2.11_{9,10,11} predict the outcomes of simple events using the rules of probability
- AM2.13_{9,10,11} use process charts and histograms, run charts, scatter diagrams, and normal distribution curves in order to perform statistical process (quality) control ◇

Algebra I

- Al.1_{9,10,11} simplify numerical expressions and evaluate algebraic expressions using grouping symbols and order of operations
- Al.2_{9,10,11} translate word phrases into algebraic expressions and word sentences into equations or inequalities ◇
- Al.4_{9,10,11} solve multi-step linear equations and inequalities in one variable and apply the skills toward solving practical problems ◇
- Al.5_{9,10,11} solve literal equations (i.e. formulas) for a given variable and apply the skills toward solving practical problems and better equip students for

calculator usage ◇

Al.6_{9,10,11} analyze a given set of data for the existence of a pattern, represent the pattern algebraically and graphically, determine the domain and range, and determine if the relation is a function ◇

Al.9_{9,10,11} determine the slope of a line given an equation of the line, the graph of the line, or the information that allows two points to be identified. Appropriate applications, such as graph interpretation, will be utilized ◇

Al.11_{9,10,11} write an equation of a line using sufficient given information such as the graph of a line, two points on the line, the slope and a point, or the slope and the y intercept

Al.17_{9,10,11} identify the effects of parameter changes on a function ◇

Al.18_{9,10,11} solve equations containing radicals

Al.19_{9,10,11} solve inequalities

Geometry and Applied Geometry

G.6_{10,11} explore the relationship between angles formed by two lines cut by a transversal when lines are and are not parallel, and use the results to develop methods to show parallelism

G.8_{9,10,11} explore and identify properties of quadrilaterals and verify properties for parallelogram, rectangle, rhombus, square, and trapezoid

G.10_{9,10,11} apply properties of similar triangles to determine inaccessible heights and distances, construct scaled drawings, and derive the basis for the trigonometric ratios

G.11_{9,10,11} using trigonometric ratios, determine lengths of sides and measures of angles in right triangles

G.12_{10,11} apply the Pythagorean

Theorem and its converse in solving practical problems and in deriving the special right triangle relationships

G.14_{9,10,11} discover the measures of angles of a polygon and connect the results to tessellating pattern ◇

G.15_{9,10,11} discover the lengths of sides of polygons from given data ◇

G.16₉ develop and apply formulas for area, perimeter, surface area, and volume and apply them in the modeling of practical problems ◇

G.17_{9,10,11} develop and apply basic concepts of analytical geometry such as formulas for distance, slope, and midpoint ◇

G.19_{9,10,11} recognize terminology associated with transformational geometry. Given a figure, create a reflection, translation, rotation, glide reflection or dilation of that figure

G.21_{9,10,11} find the area of a closed figure inscribed within another closed figure

G.22_{9,10,11} using the Cartesian Coordinate system, find the dimensions of a polygon, given the coordinates of the polygon

Algebra II

A2.2_{9,10,11} continue to review the concept of slope of a line, write equations of lines given various information, and graph linear equations. Graphing calculators will be used as a teaching aid ◇

A2.3_{9,10,11} continue to factor polynomials by applying various methods of factoring including the sum and difference of two cubes

A2.4_{9,10,11} solve and graph the solution of a linear inequality and systems of linear inequalities in two variables.

Graphing calculators will be used to enhance the solving and confirming of solutions

A2.6_{9,10,11} simplify radicals and expressions involving fractional exponents and convert between the two forms

A2.10_{9,10,11} solve equations containing radicals and exponents

A2.11_{9,10,11} recognize linear, quadratic, absolute value, step, and exponential functions. Convert between a graph, table and an equation

A2.12_{9,10,11} find the domain, range, zeros, and inverse of a function, the value of a function for a given element in its domain, and the composition of multiple functions

A2.13_{9,10,11} graph quadratic functions, solve problems using quadratic equations, and solve quadratic inequalities

A2.14_{9,10,11} find the maximum and minimum values of a function over a region using linear programming techniques ◇

A2.19_{9,10,11} solve problems using non-routine strategies ◇

Trigonometry

T.11_{9,10,11} solve practical problems involving triangles using the trigonometric functions, the Pythagorean Theorem, the Law of Sines, and the Law of Cosines

Probability and Statistics

PS.2_{9,10,11} create and interpret data using various methods of displaying numerical data, including frequency distributions, circle graphs, histograms, and frequency curves, and make predictions about outliers ◇

PS.4_{9,10,11} express the chances of events occurring either in terms of a probability or odds

PS.5_{9,10,11} use the normal

distribution and the binomial distribution including Pascal's triangle, to determine probability of events

PS.6_{9,10,11} interpret and calculate measures of central tendency (mean, median, and mode) from data presented in a variety of forms such as charts, tables, and graphs or from data created through experimentation ◇

PS.7_{9,10,11} interpret and calculate measures of dispersions (range and standard deviation) from data presented in a variety of forms such as charts, tables and graphs or from data created through experimentation ◇

PS.12_{9,10,11} determine the correlation values for given data or for data generated by students and use the results to describe the association of the variables within the given data. Identify whether this association is systematic or predictable ◇

PS.15_{10,11} perform a regression analysis on a set of data, either given or created through experimentation, and use the results to predict specific values of a variable. Identify the equation for the line of regression for a scattergram

PS.17_{9,10,11} make a prediction based upon a statistical sample ◇

PS.18_{9,10,11} make a statistical conclusion based on information in a chart or table ◇

Pre-Calculus

PC.8_{9,10,11} solve problems involving the sum of finite and infinite sequences and series. Sigma (summation) notation will be included

PC.15_{9,10,11} estimate the area under a curve

Discrete Mathematics

DM.5_{9,10,11} find the number of possible ways independent objects from a given set may be selected or find the number of ways events may occur

DM.8_{9,10,11} calculate the probability of a given event occurring

DM.15_{9,10,11} use recurrence relations to solve problems

Algebra Geometry Preparation

AGP.4_{9,10,11} read, interpret, and construct graphs to solve problems.

AGP.5_{9,10,11} use data to determine mean, median, mode, and range

AGP.6_{9,10,11} find the probability of complementary events and exclusive events

AGP.10_{9,10,11} estimate and find circumference and area of a circle

AGP.11_{9,10,11} estimate and find the area and perimeter of polygons

AGP.12_{9,10,11} estimate and find the surface area and the volume of three dimensional figures

AGP.14_{9,10,11} identify angle relationships; involving parallel lines and apply in solving problems (corresponding angles, alternate interior angles, and alternate exterior angles)

AGP.15_{9,10,11} investigate similar triangles and apply proportions in problem solving situations

AG1.17_{9,10,11} substitute values, evaluate expressions involving variables, and calculate formulas to solve application problems

AGP1.18_{9,10,11} solve equations with at least two operations

Adolescent Social Studies Education

The social studies curriculum prepares students for gainful employment, post secondary education or college, to participate responsibly in society, and to be lifelong good citizens of the community. Each course will provide experiences and will emphasize skills which enable students to make the transition from the classroom to the workplace.

Required Courses

United States Studies to 1900
World Studies to 1900
Twentieth / Twenty-First Centuries Studies

Elective Courses

Civics / Government*
Economics*
Geography
AP Courses
College Courses

* Required to be offered.

It is strongly recommended that students in Advanced Placement social studies courses take the AP exam.

County school systems or individual high schools may opt to offer additional social studies courses. Instructional goals and objectives must be developed for these courses and approved by the county board of education.

Grade Nine:

United States Studies to 1900

This program of study follows the evolution of the Constitution as a living document and the role of participatory democracy in the development of a rapidly changing technological society. This study of the United States is an examination of the formative years from the Pre-Columbian civilizations to its transformation as a dominant political and economic influence in the world. Special emphasis is placed on how the challenges of settling expansive and widely-differing environments were met by a diverse population.

Civics

9.1₁₀ analyze the content of the Declaration of Independence and the factors that led to its creation ◇ 9.2_{5,6} summarize the impact of documents and philosophies that were the basis for the United States governmental system ◇ 9.3₁₀ explain the major challenges faced by the members of the Constitutional Convention and how the design of the Constitution affects national, state, and local powers ◇ 9.4 analyze the United States Constitution as a response to the political, economic, and social conditions that existed after the American Revolution (e.g., federation and confederation, power of taxation, interstate commerce, adaptability of the United States Constitution, Bill of Rights) ◇ 9.5_{3,4,5,6,7,8,10,11} explain the Constitutional basis for resolving disputes among branches of government ◇ 9.6₁₀ explain the steps required	to amend the Constitution ◇ 9.7₁₁ describe the presidential election process (e.g., reasons for the creation and continued use of the Electoral College, the duties of the president, and the order of the presidential succession process) ◇ 9.8_{3,4,5,6,7,8,10,11} describe how the legislative process works to resolve a specific legal problem ◇ 9.9 compare and contrast various American people's responses to controversial government actions ◇ 9.10_{3,8,10} describe the different types of local government, and compare their functions and powers 9.11_{6,8} discuss the complexity and variety of issues facing local governments (e.g., zoning laws) ◇ 9.12₁₀ explain the evolution of representative democracy in the United States 9.13_{3,4,5,6,7,8,11} explain the purpose, organization, and function of the legislative, executive, and judicial branches 9.14_{7,8} summarize the Articles of and Amendments to the

Constitution

- 9.15 demonstrate the ability to work cooperatively and resolve conflict peacefully ◇

Economics

- 9.16_{3,4,5,6,7,8,10,11} draw conclusions, make inferences, and suggest generalizations about United States economic issues using various types of graphs, charts, and tables ◇
- 9.17 describe how the United States economic system changed from mercantilism to free enterprise capitalism ◇
- 9.18 examine the role of the United States government in the banking, finance, and monetary systems ◇
- 9.19 analyze the effects of foreign trade and tariff policies on the United States through the use of charts and graphs ◇
- 9.20 differentiate among various types of taxes and relate them to taxation controversies in the United States during their era ◇
- 9.21₁₁ describe the cause and effect relationship between the labor movement and industrialization in the United States ◇
- 9.22 identify and analyze the role of market factors in the settlement of the United States and the development of the free enterprise system ◇
- 9.23_{6,10} understand and explain the concept of capitalism and compare the basic components to other economic systems (e.g., socialism and communism) ◇
- 9.24_{3,4,5,6,7,8,10,11} determine the relationship between the law of supply and demand, production, and consumption ◇
- 9.25_{3,4,5,7} understand the concept of taxation (e.g., income,

property, sales, and estate) ◇

Geography

- 9.26 explain settlement, population patterns, and the growth of service centers from reading and interpreting maps, graphs and charts ◇
- 9.27 identify and describe major landforms, cities, and climate areas of the United States ◇
- 9.28 show how the climates, landforms and rivers of the United States compare to those throughout the world
- 9.29_{3,6,7} analyze the relationship of Native American cultures to their physical environment
- 9.30 describe geographic differences which contributed to economic development and regionalism prior to the Civil War
- 9.31 locate and place on a blank map, states and capitals, landforms, and major events in United States history
- 9.32₁₁ analyze the effect of geography on immigration and settlement patterns ◇
- 9.33₇ locate major meridians of longitude and parallels of latitude
- 9.34₇ locate and identify major world rivers, climate areas, and rain forests
- 9.35 explain the impact of health and cultural considerations on the quality of life over different historical time periods

History

- 9.36 chart the contacts that occurred between Native Americans and European settlers
- 9.37 analyze the effect of United States policy on Native Americans
- 9.38₅ analyze the factors that led to settlement and expansion

- across the United States ◇
 9.39_{7,11} explain major United States conflicts in terms of causes and consequences ◇

- 9.40 analyze the effect of European empire building and how it led to the American Revolution ◇

- 9.41 analyze how nationalism affected the constitutional, political, economic and foreign policy issues faced by the U. S. in its formative years ◇

- 9.42 compare the political, economic, and social conditions in the United States before and after the Civil War ◇

- 9.43 evaluate the effects of technological change on the United States ◇

- 9.44 analyze the goals and actions of reformers and reform movements during this era ◇

- 9.45 describe the influence and impact of diverse cultures on United States society and their assimilation into American life

- 9.46_{3,4,5,6,7,8,10,11} draw conclusions about America from maps, graphs, charts, cartoons and timelines ◇

- 9.47_{4,7} explain how technological development has affected agriculture

Review for Assessment

- 9.48 trace the development of religion in early civilizations
 9.49 analyze the contributions of

- Russian rulers to the development of that country
 9.50_{7,11} analyze twentieth century foreign policy and wars

Computer/Technology

- 9.51 use appropriate software to practice and master grade nine social studies instructional objectives ◇

- 9.52 use a variety of audio-visual and multi-media materials to practice and master ninth grade social studies instructional objectives ◇

- 9.53 practice inputting data using correct keying, editing, and formatting techniques

- 9.54 use graphics software to create graphs, histograms, tables, and charts ◇

- 9.55 use graphics software to select the appropriate type of graph to display a set of data ◇

- 9.56 design and use a database to analyze, compare, and interpret the relationship between United States historical and geographical events ◇

- 9.57 use simulation software for investigating open-ended problems, formulating questions and extending problem-solving situations as they relate to United States history ◇

Grade Ten: World Studies to 1900

This study of the world emphasizes the historic, economic, geographic, political, and social structure of various cultural regions of the world from the dawn of civilization to the

interdependent world of the twentieth century. Special attention is given to the formation and evolution of societies into complex political and economic systems. Geography /map skills and critical thinking skills are emphasized.

Civics

- 10.1 identify and evaluate the contributions of the classical civilizations to the development of the United States Constitution.
- 10.2 **discuss world historical events which affected the evolution of democracy in various countries as well as the United States**
- 10.3 analyze the nature of civic responsibility in a diverse society
- 10.4 analyze the causes and resolution of conflict ◇
- 10.5_{3,4,5,6,7,8,9,11} **identify the powers delegated to the United States Constitution by local, state and national governments and qualifications of state leaders**
- 10.6₉ **explain the section of the United States Constitution that describes the election, duties and replacement of the president and vice president**
- 10.7₉ **explain the process used to amend the United States Constitution ◇**
- 10.8₉ **analyze the Declaration of Independence**
- 10.9 **define the powers of the federal government**

Review for Assessment

- 10.10_{6,11} **explain the significance of Supreme Court decisions that have affected civil rights**
- 10.11₉ **explain the major challenges of the Constitutional Convention**
- 10.12 **analyze cause and effect of the War Powers Act of 1973**

Economics

- 10.13 **describe the main imports and exports of regions of the world ◇**
- 10.14 **analyze and describe how**

various societies developed economic systems (e.g., goods and services produced and how they were distributed) ◇

- 10.15 **analyze the role of exchange/trade systems as economic systems developed ◇**
- 10.16 **analyze and compare monetary and fiscal policies of several world societies**
- 10.17 **identify a cause and effect relationship of economic change ◇**
- 10.18_{3,4,5,6,7,8,9,11} **read and interpret relevant charts, graphs, and tables ◇**
- 10.19 **compare the advantages and disadvantages of developing economic systems**

Review for Assessment

- 10.20₇ **identify the role of stock ownership**
- 10.21 **analyze the economics systems that developed or changed following the Civil War**
- 10.22_{3,4,5,6,7,8,9,11} **differentiate between services supplied by public and private sectors**
- 10.23 **describe economic development and changes in the United States before and after 1900 (e.g., federal deficit and the origins of the national debt) ◇**
- 10.24 **identify and describe problems between the British Parliament and the American colonies (e.g., Parliament's right to rule, taxation, and trade restrictions)**

Geography

- 10.25_{3,4,5,6,7,8,9,11} **read and interpret information using maps, graphs and charts ◇**

- 10.26 **identify and label geographic features of the world (e.g., continents, mountain ranges, and bodies of water)**
- 10.27 **identify and label geographic features of the continents (e.g., plateaus, highpoints, low points and major river valleys)**
- 10.28 **identify world language patterns**
- 10.29 **identify world resources and explain how the location of resources influenced economic development and the global economy**
- 10.30 **identify and explain geographic reasons for the development of major world cities and the recent trends in urban population growth** ◇
- 10.31 **explain the development of major political boundaries of the world, and relate these to the theme of geo-politics** ◇
- 10.32 **describe the evolution of significant world trade routes** ◇
- 10.33 **describe and analyze the migration of people during this era**
- 10.34 **analyze the physical and cultural patterns of settlement**
- 10.35 **identify the effect of geographic features upon the environment**
- 10.41 **compare feudalism around the world**
- 10.42 **identify and evaluate the political and economic role and the cultural contributions of the Christian church in medieval society**
- 10.43 **describe the role and impact of the Crusades**
- 10.44 **relate the worth of the individual in society to the growth of the concept of the "Renaissance Man"**
- 10.45 **describe the location, unique contributions, and characteristics of Arab/Islamic society**
- 10.46 **analyze the historical developments of the Reformation, including the effects of theological, political, and economic differences** ◇
- 10.47 **describe how European needs/wants for foreign products contributed to the Age of Exploration** ◇
- 10.48 **identify the impact of British colonization**
- 10.49 **identify and assess the impact of the Industrial Revolution**
- 10.50 **describe how late 19th century social reformers improved the conditions for working class people through social changes** ◇
- 10.51 **identify and explain the development of various forms of government in Latin America** ◇
- 10.52 **analyze and assess the impact of revolutions** ◇
- 10.53 **analyze and assess the concept of nation building** ◇
- 10.54 **examine key people, places, events and ideas of the period** ◇
- 10.55^{3,4,5,6,7,8,9,11} **read and interpret historical charts, tables, graphs, narratives, primary source documents, political cartoons, and timelines** ◇
- 10.56 **analyze the development of the French, English, and Spanish navies**

History

- 10.36 **identify and evaluate the interaction of early humans with their environment** ◇
- 10.37 **analyze the causes for the rise and decline of civilizations (e.g., the river civilizations, Greek and Roman Empires)**
- 10.38 **identify, compare, and evaluate the political, economic and cultural contributions of significant world societies**
- 10.39 **analyze the cyclical nature of dynasties**
- 10.40 **explain the basic tenets of major world religions and philosophies**

- 10.57 identify legal systems which had an impact on western civilization
- 10.58 identify the major causes for the fall of the Roman Empire

Review for Assessment

- 10.59₅ identify the major goals for the New Deal
- 10.60 analyze and sequence important events of the Civil War
- 10.61 explain the meaning of the United States "Open Door" policy
- 10.62_{6,9} analyze the commonalities and differences of Fascism, Nazism, and Communism

Computer/Technology

- 10.63 use appropriate software to practice and master grade ten social studies instructional objectives ◇
- 10.64 use a variety of audio-visual and multi-media materials to practice and master tenth grade social studies instructional objectives ◇
- 10.65 practice inputting data using correct keying, editing, and formatting techniques ◇
- 10.66 use graphics software to create graphs, histograms, tables, and charts ◇
- 10.67 use graphics software to select the appropriate type of graph to display a set of data ◇
- 10.68 design and use a database of countries of the world to analyze, compare, and interpret the relationship between historical and geographical events ◇
- 10.69 use simulation software for investigating open-ended problems, formulating questions and extending problem-solving situations as they relate to world studies ◇

Grade Eleven: Twentieth / Twenty-First Centuries Studies

The focus of this course is an identification and study of the interaction of geographic, political, economic, and historical factors. Such factors provide students a framework to examine and appreciate the changing nature of societies and the increasing interdependency of the United States and the world. Students will contrast and evaluate past and present world concerns and hypothesize about problems and solutions for the future. Students will realize the importance of well-informed citizens in a diverse society and their place in the democratic process.

Civics

- 11.1 analyze the changing nature of federalism and the growth of national government
- 11.2 examine Supreme Court cases and explain their Constitutional basis ◇
- 11.3 explain the role of the president in the formation of national and foreign policy ◇
- 11.4 _{3,4,5,6,7,8,9,10} identify the responsibilities and interaction of the executive, legislative, and judicial branches in an increasingly complex society

- 11.5 identify the reasons for amendments ratified since 1900 and analyze the effects
- 11.6_{6,9} analyze the election process and the functions of political parties
- 11.7 evaluate the formation, role, and impact of third parties in the United States political process ◇
- 11.8_{4,6,7} analyze and compare the goals and actions of reformers with regard to the extension of civil rights ◇
- 11.9 examine historical and current political conflicts and compare resolutions within the framework of constitutional and totalitarian states ◇
- 11.10₁₀ analyze the changing nature of civic responsibility in a diverse society
- 11.11 develop generalizations and make inferences from primary and secondary sources ◇
- 11.12 compare and contrast totalitarian and democratic governments and list representative examples ◇
- 11.13 outline the purposes and functions of major international governmental and non-governmental organizations
- 11.14 cite examples of working cooperatively and resolving conflict peacefully ◇
- 11.15 analyze and evaluate the influence of citizen action on public policy and law making ◇
- 11.16 formulate positions and possible actions on the problems of today and possible challenges of the future ◇

Review for Assessment

- 11.17₅ identify compromises in the formation of the United States Constitution

Economics

- 11.18_{3,4,5,6,7,8,9,10} identify the basic economic systems and explain

how each attempts to allocate scarce resources ◇

- 11.19 analyze national and international economic interdependency ◇
- 11.20 apply the law of supply and demand in the production of services in developed and developing nations ◇
- 11.21 explain the business cycle and how different political systems formulate policy ◇
- 11.22 explain monetary policy and its effect on society ◇
- 11.23 analyze the causes and consequences of the U.S. national debt and its effect on the world economic system ◇
- 11.24 explain the impact of technology and industrialization on the development of mass production and mass consumption ◇
- 11.25 analyze the economies of developing nations ◇
- 11.26 explain how Gross Domestic Product and per capita income are calculated and used to compare the economies of different nations ◇
- 11.27 explain how industrialization/technology changes life styles
- 11.28 compare and evaluate basic economic systems according to how the system deals with demand, supply, labor unions, savings, investment, and capital ◇
- 11.29 review ideas of noted economists

Geography

- 11.30 identify U.S. settlement patterns after 1900, and draw conclusions about causes and effect
- 11.31 relate and interpret the importance of geographic resources to international conflicts and cooperation since 1900 (e.g., discuss how

- U. S. dependence on Middle Eastern oil resulted in -geopolitical consequences) ◇
- 11.32 relate and interpret the importance of geographic factors to social, political, economic and technological change (e.g., discuss the supposed increased "cost of doing business" since the establishment of the Environmental Protection Agency, or the lack of water west of the Mississippi) ◇
- 11.33_{3,4,5,6,7,8,9,10} read and interpret maps, graphs, charts, cartoons, and timelines ◇
- 11.34 transform primary data into maps, graphs, and charts ◇
- 11.35 identify on a blank map the places significant to each period of study
- 11.36 analyze the impact of human decision making and technology on the environment. (e.g., discuss the geographic discrimination suffered by minority neighborhoods) ◇
- 11.37₁₀ apply geographic factors/features in relationship to development of civilizations ◇
- 11.38 draw conclusions about the advantages and disadvantages of annual flooding in the world
- 11.39 analyze and describe the effect of the Gulf Stream

History

- 11.40 assess the impact of United States foreign policy on different world regions ◇
- 11.41_{7,9} identify and analyze the causes and consequences of world conflicts (e.g., World War I, World War II, Korea, Vietnam, and Gulf War) ◇
- 11.42 identify and analyze the causes and consequences of regional conflicts (e.g., Middle East, Latin America, Africa, and Europe) ◇
- 11.43 critique United States immigration policies
- 11.44₉ describe the development and impact of the United States

labor movement

- 11.45 describe the growth and development of social, economic, and political reforms ◇
- 11.46 explain the rise and fall of Communism in the former Soviet Union
- 11.47 analyze the advent and implications of the Nuclear Age
- 11.48₇ analyze the origins and implications of the Cold War
- 11.49 trace and analyze the development of civil and human rights in the U.S. and in the world ◇
- 11.50 analyze the challenges to national and world security by extremists and terrorists ◇
- 11.51 identify major historical events in chronological order
- 11.52 trace and analyze the global concern for human rights (e.g., Holocaust, ethnic cleansing)
- 11.53 describe the impact of important African-American leaders

Review for Assessment

- 11.54 identify the Supreme Court decision which institutionalized slavery

Computer/Technology

- 11.55 use appropriate software to practice and master grade eleven social studies instructional objectives ◇
- 11.56 use a variety of audio-visual and multi-media materials to practice and master eleventh grade social studies instructional objectives ◇
- 11.57 practice inputting data using correct keying, editing, and formatting techniques ◇
- 11.58 use graphics software to create graphs, histograms, tables and charts ◇
- 11.59 use graphics software to select the appropriate type of graph to display a set of data ◇
- 11.60 design and use a database to analyze, compare, and interpret the relationship between historical and geographical

events of the twentieth and early
twenty-first century ◇

- 11.61 use simulation software for
investigating open-ended
problems, formulating questions
and extending problem-solving
situations as they relate to the
twentieth and early twenty-first
centuries ◇

- 11.62 critically evaluate information
obtained from
telecommunications and other
technology sources ◇

Economics

Understanding economics is essential so students will know that most decisions have economic consequences. As resources become scarce, as the economic environment changes, and as the economic impact of decisions becomes more immediate, students must know how to use economic analysis to solve the complex problems they face now and in the future. This course will emphasize the need to make sense of the array of economic facts, events, observations and issues in everyday life and the ability to make effective decisions about economic issues.

E.1	give examples that show how scarcity of goods and services forces people to make choices about needs and wants ◇	E.9	economic process ◇ compare and analyze how values and beliefs influence economic decisions in different economic systems ◇
E.2	analyze how the scarcity of natural, technological, capital, and human resources requires economic systems to make choices about the distribution of goods and services ◇	E.10	evaluate economic systems according to how laws, rules, and procedures deal with demand, supply, and prices ◇
E.3	explain the role supply and demand, prices, incentives, and profits plays in determining what is produced and distributed in a free enterprise system ◇	E.11	evaluate historical and current social developments and issues from an economic perspective ◇
E.4	compare and contrast examples of private and public goods and services ◇	E.12	explain historical and current developments and issues in local, national, and global contexts from an economic perspective ◇
E.5	evaluate the costs and benefits of allocating goods and services through public and private means ◇	E.13	define inflation and explain its effects on economic systems ◇
E.6	describe and compare relationships among economic institutions (e.g., households, businesses, banks, government agencies, and labor unions) ◇	E.14	define and analyze the use of fiscal and monetary policy in the national economic system ◇
E.7	explain how specialization and division of labor in economic systems increase productivity ◇	E.15	explain the process of international trade from an economic perspective ◇
E.8	describe the role of money and other forms of exchange in the	E.16	analyze and evaluate growth and stability in different economic systems ◇
		E.17	analyze a public issue from an economic perspective and propose a socially-desirable solution ◇

Civics/Government

Civic education is essential for active participation by informed citizens. This course will emphasize a study of government and individual rights and responsibilities. Examination of rules and laws and the need for authority are crucial to maintaining a safe society for diverse individuals and groups. Civic understanding increases as students develop the skills to make informed decisions, to resolve conflicts peacefully, to articulate and defend positions, and to engage in the civic and political life of their communities.

C.1	use documents such as the Declaration of Independence and the Constitution to explain the primary purposes of government ◇	C.11	explain how power is separated and shared in the United States at all levels of government ◇
C.2	describe the characteristics of government and civil society that relate to civic participation ◇	C.12	define federalism and differentiate between state and federal governments ◇
C.3	explain the significance of the consent of the governed in the formation of a democratic society ◇	C.13	explain the system of checks and balances provided by the Constitution ◇
C.4	explain the rule of law and why accepted rules must be followed by the government and those governed ◇	C.14	explain how the rights of those accused of crime are protected in the 5th, 6th, and 14th amendments ◇
C.5	compare and contrast the tension between individual liberty and society's need for order ◇	C.15	explain the values and interests protected by the right to counsel and due process ◇
C.6	identify examples of how individual rights are protected and how the government promotes the common good ◇	C.16	identify and describe United States foreign policy, national security, and objectives ◇
C.7	explain the rights of people to express their views and positions on proposed governmental actions ◇	C.17	describe the importance of foreign policy to individual citizens ◇
C.8	compare and contrast direct and representative democracy ◇	C.18	explain the process of becoming a citizen ◇
C.9	explain why the founding fathers chose a republic as a form of government ◇	C.19	explain how United States citizenship differs from authoritarian and totalitarian regimes ◇
C.10	explain the roles of elected officials and their relationship to citizens ◇	C.20	evaluate and defend positions on issues facing contemporary American society ◇
		C.21	describe and evaluate the ways in which technology might affect civic life in the future ◇

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Geography

Adolescent Science Education

The goal of adolescent science education prescribes that all students be scientifically literate. To accomplish scientific literacy, a curriculum based on an integration of science, mathematics, and technology with an emphasis on development of themes and concepts shall be utilized. The science program represents a core curriculum from which all students will successfully complete three science courses (Coordinated and Thematic Science Nine, Coordinated and Thematic Science Ten, and one approved science elective at a level higher than Thematic Science Ten) for science credit toward high school graduation.

The CATS Nine and CATS Ten courses continue the development of biology, chemistry, physics, and earth/space science concepts from the middle school curriculum. CATS Nine and CATS Ten are laboratory-based courses. Completion of CATS Nine and CATS Ten assures that students possess the foundational knowledge and preparation needed for advanced, in-depth study in all fields of science - biological sciences, chemistry, physics, and the environmental earth sciences.

Electives must address all seven overarching goals of the science curriculum. They are in-depth studies in laboratory-based natural sciences and science applications.

Required Courses

Coordinated and Thematic Science Nine
Coordinated and Thematic Science Ten

Elective Courses*

Biology Eleven/Twelve
Chemistry Eleven/Twelve
Chemistry - Technical/Conceptual
Environmental Earth Science Eleven/Twelve
Human Anatomy and Physiology
Physics - Eleven/Twelve
Physics - Technical/Conceptual
AP Courses
College Courses

* A minimum of one advanced course for each of the four fields of science (Biological Sciences, Chemistry, Environmental Earth Sciences, and Physics) must be offered.

County school systems or individual high schools may opt to offer additional approved science electives such as Astronomy, Biochemistry, Botany/Zoology, Coordinated and Thematic Science Eleven/Twelve, Ecology, Microbiology, Organic Chemistry, Physical Geology. The instructional goals and objectives for these science electives must be approved by the county board of education.

Grade Nine Science

The Coordinated and Thematic Science (CATS) Nine objectives continue the development of foundational knowledge in biology, chemistry, physics, and the earth sciences. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy across these major fields of science. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of the major science themes of systems, changes, and models.

Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and research/laboratory skills.

Safety instruction is integrated in all activities. Building on the knowledge and skills acquired in CATS Eight, students in CATS Nine will expand and deepen their understanding of major concepts such as energy interactions, genetic probabilities, chemical changes and mineral composition of local rock layers.

Nature of Science

- 9.1 participate in activities that consider alternate, changing points of view to stimulate the development of a sense of inquiry ◇
- 9.2 recognize general limitations of science
- 9.3₁₁ explain that science is composed of observations set in a testable framework of ideas
- 9.4 conclude that science is a blend of creativity, logic and mathematics

Scientific Attitudes/Habits of Mind

- 9.5_{4,5,6,7,8,10,11} model and exhibit the skills, attitudes and/or values of scientific inquiry (e.g., curiosity, logic, objectivity, openness, skepticism, appreciation, diligence, integrity, fairness, creativity) ◇
- 9.6 demonstrate ethical practices for science (e.g., established research protocol, accurate record keeping, replication of results and peer review) ◇
- 9.7₁₁ apply scientific approaches to seek solutions for everyday problems (e.g., personal, community health, population growth, natural resources, environmental quality, natural and human induced hazards and scientific and technological challenges) ◇

Scientific Processes/Thinking Skills

- 9.8_{3,4,5,6,7,8,10,11} demonstrate science processes within a problem solving setting (e.g., observing,

measuring, communicating, comparing, ordering, categorizing, classifying, relating, hypothesizing, predicting, inferring and applying) ◇

- 9.9_{3,4,5,6,7,8,10,11} organize qualitative and quantitative data into tables, diagrams, and/or graphs for analysis ◇
- 9.10_{3,4,5,6,7,8,10,11} identify, analyze, and infer using patterns and relationships in data (e.g., cause and effect graphical analysis including interpretation and extrapolation) ◇
- 9.11 use SI (metric) measurements
- 9.12 apply rational thinking processes that underlie scientific approaches to problem solving by employing critical thinking skills, imagination and creativity while working individually and/or cooperatively ◇
- 9.13 use the tools of science safely, accurately and appropriately ◇
- 9.14_{4,5,6,8} identify independent and dependent variables in experimental investigations
- 9.15 manipulate variables to extend experimental activities
- 9.16₁₁ design, conduct, evaluate and revise experiments (e.g., identify questions and concepts that guide scientific investigations, design and conduct scientific investigations, use technology and mathematics to improve investigations and communications, formulate and

revise scientific explanations and models using logic and evidence, recognize alternative explanations, communicate and defend a scientific argument, understand about scientific inquiry) ◇

Laboratory Investigations/Hands-on Learning

- 9.17 engage in active inquiries, investigations and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and laboratory skills ◇
- 9.18 properly and safely manipulate equipment, materials, chemicals, organisms and models ◇
- 9.19 conduct explorations in a variety of environments (e.g., laboratories, museums, libraries, parks and other outdoors locations) ◇
- 9.20 use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze and/or report data, interact with simulations, and research ◇

Science Content and Themes

- 9.21 articulate connections among the major disciplines of science
- 9.22 utilize the thematic approach incorporating the following themes: systems, changes, and models
- 9.23₁₁ analyze and explain the principles of genetics (e.g., monohybrid and dihybrid crosses, mutations, genotypes, phenotypes, X and Y chromosomes, DNA, probability, diversity) - *models*
- 9.24_{7,8,10,11} identify and explain the structures and functions of tissues (e.g., striated, cardiac, smooth muscle) - *systems*
- 9.25_{7,8,10,11} explain how human body systems work together (e.g., excretory, digestive systems) - *systems*
- 9.26_{7,11} identify and describe microscopic organisms and foreign substances in the environment and their harmful - effects (e.g., microorganisms, mutagens,

- carcinogens) - *systems*
- 9.27 mathematically illustrate changes in populations of organisms - *changes*
- 9.28 identify the organisms and the chemical processes involved in the decay of materials - *changes*
- 9.29_{4,6,8,10,11} trace the transfer of matter and energy in the chemical/molecular processes of photosynthesis, respiration, and fermentation - *changes*
- 9.30_{7,8,10,11} compare the variations in cells, tissues, and organs of the excretory and digestive systems of different organisms - *changes*
- 9.31_{3,4,5,7,8,10,11} design an environment which demonstrates the interdependence of plants and animals (e.g., energy and chemical cycles, adaptations of structures and behaviors) - *models*
- 9.32 illustrate meiosis and mitosis and relate to chromosome number and production of sperm, egg, and body cells - *models*
- 9.33 construct and manipulate models which show variations in living things (e.g., excretory, digestive systems) - *systems, models*
- 9.34 list the characteristics of radioactivity including alpha and beta particles and gamma rays - *systems*
- 9.35 associate proton number with type of element, electron distribution with reactivity, and number of neutrons with nuclear stability - *systems*
- 9.36₁₁ review the relationship between elements and their location in the periodic table including families, metals, nonmetals and metalloids - *systems*
- 9.37₁₁ determine the number of neutrons, protons and electrons given atomic number and average atomic mass number and relate to the periodic table position - *systems*
- 9.38₁₁ identify and distinguish kinds of chemical bonds including ionic, nonpolar covalent and polar covalent - *systems*
- 9.39₁₁ recognize that water has unusual properties due to its molecular shape, polarity, and hydrogen bonding - *systems*

- 9.40_{6,7,8,10,11} recognize that all chemical reactions involve energy changes (e.g. endothermic and exothermic reactions) - *systems*
- 9.41₁₁ experimentally determine the products of chemical reactions then write and balance chemical equations - *changes, models*
- 9.42_{6,7,11} conduct, write equations and classify five types of chemical reactions including synthesis, decomposition, single displacement, double displacement and combustion - *changes, models*
- 9.43_{6,7,8,10,11} investigate the relationships among temperature, pressure and volume in gases with respect to Charles (V-T), Boyles (V-P) and Gay-Lussac's Laws (P-T) - *changes*
- 9.44_{10,11} diagram the relationship between energy and phase changes (e.g. freezing, boiling, sublimation) - *models*
- 9.45₁₀ trace the development of the model of the atom (e.g. Crookes, Thompson, Becquerel, Rutherford and Bohr) - *models*
- 9.46 write formulas and name compounds given oxidation numbers of monatomic and polyatomic ions - *models*
- 9.47 draw structures of simple organic compounds (e.g. alkanes, alcohols) - *models*
- 9.48₁₁ demonstrate water characteristics including capillary action, surface tension, adhesion and cohesion via a variety of methods (e.g. chromatography, meniscus readings) - *models*
- 9.49_{8,10} experiment with a pendulum to determine which variables (amplitude, mass, length) will affect the motion of the pendulum - *systems*
- 9.50 relate the force between charged objects to the charge on the objects and the distance between them - *systems*
- 9.51 examine the differences and similarities between transverse and longitudinal waves - *systems*
- 9.52 relate absorption and dissipation of heat to the composition of a material - *systems*
- 9.53 describe the behavior of atoms and molecules in terms of the Kinetic Molecular Theory (e.g., gases, solids, liquids) - *systems*
- 9.54 relate wavelength to color and frequency - *systems*
- 9.55 review of foundational concepts including refraction, speed, distance, time, Newton's Laws, simple machines, tables and graphs, heat absorption, energy transformations, and air pressure - *systems*
- 9.56_{7,8} differentiate energy transformations (e.g., heat, light, sound, mechanical, chemical, nuclear) - *changes*
- 9.57 define a chain reaction and show an example using a radioactive isotope (e.g., U-235) - *changes*
- 9.58 differentiate between fission and fusion - *changes*
- 9.59_{6,7,8,10,11} identify and describe various forms of energy (e.g., electromagnetic, electrical, chemical, mechanical, nuclear form) - *changes*
- 9.60_{5,6,7,8,10,11} solve for variables using the density equation, $D = m/V$ and experimentally determine the density of an object making measurements of mass and volume - *models*
- 9.61 define and solve problems involving potential difference - *models*
- 9.62 define types of waves and their properties (e.g., interference, diffraction, resonance) - *models*
- 9.63 use the wave equation to determine the relationships among speed, wavelength, and frequency - *models*
- 9.64 solve electrical problems (e.g., Ohm's Law $I = V/R$, Power $P = I^2R$) - *models*
- 9.65 hypothesize and experiment when different components are substituted in an electrical circuit. Test the hypothesis - *models*
- 9.66 demonstrate and diagram a magnetic field using a bar magnet and iron filings - *models*
- 9.67 list the characteristics of electromagnetic waves and identify uses - *models*
- 9.68 define and describe half life of a

- radioactive isotope - *models*
- 9.69 demonstrate light as a wave motion (e.g., ripple tank) - *models*
- 9.70 review characteristics of light (e.g., reflect, refract, diffract) - *change*
- 9.71 review fundamental earth science concepts including air has mass and exerts pressure, physical states of matter - *systems*
- 9.72 research uses and values of natural resources - *systems*
- 9.73 research space technology in everyday life - *systems*
- 9.74 examine how scientists use seismographic evidence in determining structure and composition of the Earth's interior - *systems*
- 9.75 explain and compare motions of the sun and moon - *systems*
- 9.76 relate temperature, pressure, wind speed, wind direction, and humidity as elements of weather - *systems*
- 9.77 interpret why warm air can hold more water vapor than cold air - *systems*
- 9.78 estimate the age of materials using existing radioactive data - *systems*
- 9.79 research current environmental issues (e.g., effects of pollution, solid waste management, local, national, and global issues) - *systems*
- 9.80 relate the structure of the ocean floor to the kind of organisms present - *systems*
- 9.81 explore the properties and motions of oceans - *systems*
- 9.82 interpret how sound travels through different materials (e.g., transmitted, reflected, or absorbed) - *changes*
- 9.83_{3,6} examine and describe interactive cycles (e.g., water cycle, nitrogen cycle, and carbon cycle) - *changes*
- 9.84₁₀ distinguish the movements of subsurface water - *changes*
- 9.85₁₀ examine geologic time emphasizing isotopic ages and biostratigraphy - *changes*
- 9.86 investigate formation and destruction of mountains (e.g., weathering, earthquakes, volcanoes, plate tectonics) - *changes*
- 9.87_{4,6,7,8,10,11} construct and use weather maps and charts (e.g.,

- temperature, pressure, wind speed, wind direction, humidity) - *models*
- 9.88_{4,6,10,11} analyze and describe a common rock sample (e.g., color, grain, and composition) - *models*
- 9.89_{4,6,10,11} employ tests to identify rocks and minerals (e.g., streak, color, hardness, cleavage) - *models*
- 9.90_{8,10} estimate linear distance on a map scale (e.g., topographic maps) - *models*
- 9.91 construct and explain models (e.g., solar systems, galaxies, constellations, stellar types, and stellar evolution) - *models*
- 9.92 use a model to describe the functions of the water cycle (e.g., water entering and leaving the atmosphere, flow of water and precipitation) - *models*

Science History

- 9.93 identify contributors to the scientific body of knowledge including their diverse cultures
- 9.94 trace the historical development of key historical concepts and principles describing their impact on modern thought and life
- 9.95 describe the impact of cultural, technological, and economic influences on the evolving nature of scientific thought and knowledge ◇

Science, Technology, and Society

- 9.96 apply scientific skills and technological tools to address personal and societal needs ◇
- 9.97 engage in decision making activities and actions to resolve science-technology-society issues ◇
- 9.98 investigate and analyze the interdependence of science and technology ◇
- 9.99 describe the scientific concepts underlying technological innovations ◇
- 9.100 explore occupational opportunities in science and technology including the academic preparation necessary ◇

Computer/Technology

- 9.101 access, gather, store, retrieve, and organize data using hardware and

- software designed for these purposes
◇
- 9.102 collect, analyze, and display data using computers and other electronic technology ◇
- 9.103 access internet resources for a variety of purposes (e.g., research, exchange data, e-mail, real-time investigations) ◇
- 9.104 demonstrate skills in the use of word processing, — data bases, spreadsheets, graphics and telecommunication ◇
- 9.105 identify and solve problems with the appropriate technology ◇
- 9.106 incorporate correct grammar, spelling, vocabulary, and graphical representation for both written and oral multimedia presentations ◇

Grade Ten Science

The Coordinated and Thematic Science (CATS) Ten objectives conclude the development of foundational knowledge of biology, chemistry, physics, and the earth sciences. Through the spiraling, inquiry-based program of study, all students will demonstrate scientific literacy across these major fields of science. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of the major science themes of systems, changes, and models. Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and research laboratory skills. Safety instruction is integrated in all activities. Building on the knowledge and skills acquired in CATS Nine, students in CATS Ten will expand their depth of understanding of major concepts such as energy transformation qualifications, molecular genetics, embryology, physical, chemical and nuclear changes; mineral extraction techniques, and environmental concerns.

Nature of Science

- 10.1 participate in activities that consider alternate, changing points of view to stimulate the development of a sense of inquiry ◇
- 10.2 recognize general limitations of science knowledge
- 10.3₁₁ explain that science is composed of observations set in a testable framework of ideas
- 10.4 conclude that science is a blend of creativity, logic and mathematics
- 10.7₁₁ apply scientific approaches to seek solutions for everyday problems (e.g., personal, community health, population growth, natural resources, environmental quality, natural and human induced hazards and scientific and technological challenges) ◇

Scientific Attitudes/Habits of Mind

- 10.5_{4,5,6,7,8,9,11} model and exhibit the skills, attitudes and values of scientific inquiry (e.g., curiosity, logic, objectivity, openness, skepticism, appreciation, diligence, integrity, fairness, creativity)
- 10.6 demonstrate ethical practices for science (e.g., established research protocol, accurate record keeping, replication of results and peer review) ◇

Scientific Processes/Thinking Skills

- 10.8_{3,4,5,6,7,8,9,11} demonstrate science processes within a problem solving setting (e.g., observing, measuring, communicating, comparing, ordering, categorizing, classifying, relating, hypothesizing, predicting, inferring and applying) ◇
- 10.9_{3,4,5,6,7,8,9,11} organize qualitative and quantitative data into tables, diagrams, and/or graphs for analysis ◇
- 10.10_{3,4,5,6,7,8,9,11} identify, analyze, and infer using patterns and relationships in data (e.g., cause and affect graphical analysis including interpretation and

extrapolation) ◇

- 10.11 use SI (metric) measurements
- 10.12 apply rational thinking processes that underlie scientific approaches to problem solving by employing critical thinking skills, imagination and creativity while working individually and/or cooperatively ◇
- 10.13 use the tools of science safely, accurately and appropriately ◇
- 10.14^{4,5,6,8,9} identify independent and dependent variables in experimental investigations
- 10.15 manipulate variables to extend experimental activities
- 10.16¹¹ design, conduct, evaluate and revise experiments (e.g., identify questions and concepts that guide scientific investigations, design and conduct scientific investigations, use technology and mathematics to improve investigations and communications, formulate and revise scientific explanations and models using logic and evidence, recognize alternative explanations, communicate and defend a scientific argument, understand about scientific inquiry) ◇

Laboratory Investigations/Hands-on Learning

- 10.17 engage in active inquiries, investigations and hands-on activities for a minimum of 50 percent of the instructional time ◇
- 10.18 properly and safely manipulate equipment, materials, chemicals, organisms and models ◇
- 10.19 conduct explorations in a variety of environments (e.g., laboratories, museums, libraries, parks and other outdoors locations) ◇
- 10.20 use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze and/or report data, interact with simulations, and research ◇

Science Themes and Content

- 10.21 articulate connections among major disciplines of science

- 10.22 utilize the thematic approach incorporating the following themes: systems, change, and models
- 10.23^{4,5,6,8,11} review the needs of growing plants and the environments supplying those needs - **systems**
- 10.24⁸ identify and explain the structures and functions of cell organelles (e.g., Golgi bodies, endoplasmic reticulum, mitochondria, chloroplast, ribosomes, lysosomes, vacuoles) - **systems**
- 10.25^{7,8,9,11} explain how human body systems work together (e.g., nervous, endocrine, immune)- **systems**
- 10.26^{3,4,5,6,7,8,9} review factors that affect succession and populations and communities (e.g., use maps, graphs, charts, and tables) - **systems**
- 10.27 identify mechanisms for the movement of materials into and out of cells (e.g., active and passive transport, endo- and exocytosis) - **systems**
- 10.28¹¹ explain the role of DNA in controlling cellular functions (e.g., protein synthesis, heredity, cell division) - **systems**
- 10.29^{3,4,5,6,7,8,9,11} construct concept maps showing energy flow and cycles of matter between chemical and biological systems including photosynthesis, stored chemical energy, decomposition, carbon and nitrogen cycles) - **changes**
- 10.30⁸ trace matter and energy flow through the respiration processes of glycolysis, the Krebs cycle, and electron transport system (e.g., ATP, carbon, oxygen, water) - **changes**
- 10.31^{7,8,9,11} compare the variations in cells, tissues, and organs of the nervous, endocrine and immune systems of different organisms - **changes**
- 10.32 compare the embryonic development of invertebrate and vertebrate animals (e.g., ontogeny and phylogeny, diversity, taxonomy) - **changes**
- 10.33^{3,4,5,6,7,8,9} relate the role of natural selection to the development and/or extinction of a species - **changes**

- 10.34_{7,8,9,11} **illustrate the interdependence of cells, tissues, organs, and systems to the life functions of the whole organism - models**
- 10.35 **construct and manipulate models which show variations in living things (e.g., nervous, endocrine, immune systems) - models**
- 10.36_{3,5,6,8,11} **investigate the properties of solutions including density, conductivity, solubility, concentration, pH, and colligative properties - systems**
- 10.37₁₁ **use polarity, molecular shape, and bonding to explain why water is considered the "universal solvent" - systems**
- 10.38_{6,7,8,9,11} **interpret graphs showing the relationships among temperature, pressure, and volume in gases with respect to Charles (V-T), Boyles (V-P), and Gay-Lussac's Law (P-T) - systems**
- 10.39_{4,5,6,7,8,9,11} **differentiate between physical, chemical, and nuclear changes - changes**
- 10.40 **measure the change in heat gained or lost during chemical reactions using the specific heat of water (e.g., heat released during burning of food materials, acid-base neutralization) - changes**
- 10.41₁₁ **investigate the relationship between energy and phase change in order to demonstrate heat of fusion and/or heat of vaporization - changes**
- 10.42 **recognize that the equation $E=mc^2$ can be used to illustrate the conversion of mass to energy during nuclear reactions - changes**
- 10.43₁₁ **validate the law of conservation of matter in chemical reactions - changes**
- 10.44_{6,7,9,11} **use chemical equations to represent chemical and biochemical reactions (e.g., photosynthesis) - models**
- 10.45₉ **predict the isotope or radiation particle emitted during nuclear reactions given either isotope or radiation particles - models**
- 10.46 **complete simple nuclear equations given all but one of the materials involved in the reaction - models**
- 10.47 **illustrate how scientists used the electromagnetic spectrum to show the energy levels of electrons within atoms - models**
- 10.48 **relate characteristics and behavior of waves with earth and life processes (e.g., erosion, vision) - systems**
- 10.49 **calculate the relationship among rate, force, momentum and time - systems**
- 10.50 **summarize the relationship between frequency and speed (e.g., Doppler effect) - systems**
- 10.51_{8,9} **determine the effect of different forces on vibrating systems (e.g., pendulums, springs) - systems**
- 10.52₉ **qualitatively explain the relationship between electricity and magnetism (e.g., the electromagnetic field) - systems**
- 10.53_{4,5} **describe how components of an electric circuit function individually and as a component in an electric circuit - systems**
- 10.54 **review of fundamental concepts including air pressure, speed (distance and time), pendulums, vibrating objects - systems**
- 10.55_{3,9,11} **demonstrate qualitative and quantitative understanding of pressure in various systems (e.g., water pipes, circuits, blood vessels) - systems**
- 10.56_{3,4,5,6,7,8,9,11} **qualitatively and quantitatively describe the conservation of energy (e.g., thermal, chemical, mechanical) - changes**
- 10.57_{5,6,7,8,9,11} **relate the physical change in substances to changes in temperature (e.g., thermal expansion/contraction, increases/decreases in density) - changes**
- 10.58 **explain the relationship between wind and waves - models**
- 10.59 **differentiate between the movement of water particles in a wave and the movement of wave energy - models**
- 10.60 **explain the cause of tides - models**
- 10.61₉ **compare and contrast the characteristics and uses of waves in various parts of the electromagnetic spectrum - models**
- 10.62₉ **calculate the frequency of a**

- particular wavelength - *models*
- 10.63₉ measure the rate of absorption of infrared radiation in containers of various colors - *models*
- 10.64 apply Newton's Laws of Motion to living systems (e.g., walking) - *models*
- 10.65 extrapolate and interpolate graphs of distance and time (e.g., migration) - *models*
- 10.66_{8,9} describe and quantify how machines can provide mechanical advantages - *models*
- 10.67_{5,6,7,8,11} identify and describe the effects of specific heat on heating and cooling objects - *models*
- 10.68 review fundamental earth science concepts including tests to identify rocks and minerals, topographic maps - *systems*
- 10.69₃ investigate fossils (e.g., origins, use in establishing geological time, types of plants and animals included in fossil-fuel formation, compare fossils to present today organisms - *systems*
- 10.70₁₁ examine the effects of natural phenomena on the environment (e.g., oceanographic, meteorologic) - *systems*
- 10.71₃ probe characteristics of the atmosphere (e.g., relationship of air pressure to temperature and humidity, demonstrate that air has mass and exerts pressure - *systems*
- 10.72₇ compare and contrast the characteristics of Earth to the other planets - *systems*
- 10.73_{8,9} illustrate methods to recover subsurface water for human use - *systems*
- 10.74₉ relate electromagnetic fields to the earth's magnetosphere - *systems*
- 10.75₇ describe factors determining the height and frequency of tides - *systems*
- 10.76 identify and describe the effects of ocean currents on climate - *change*
- 10.77_{9,11} interpret apparent motion of constellations and their relationship to the rotation of the earth - *change*
- 10.78₄ explore and explain the energy relationships in earth science (e.g.,

- weather, plate tectonics, height and frequency of waves) - *change*
- 10.79 summarize technological advances in astronomy and meteorology - *change*
- 10.80 research current environmental issues (e.g., depletion of fossil fuels, global warming, destruction of rain forest pollution) - *change*
- 10.81₈ review physical changes in earth materials due to temperature variations and relate those changes to earth's natural processes - *change*
- 10.82_{4,7} utilize a stream table to observe the effects of water on the earth's surface (e.g., changes in particle size, slope, velocity) - *change*
- 10.83₁₁ construct and interpret maps (e.g., use maps of geographic features to predict flora and fauna, weather maps and charts to observe and predict weather, topographical maps to illustrate surface features) - *models*

Science History

- 10.84 identify contributors to the scientific body of knowledge including their diverse cultures
- 10.85 trace the historical development of key scientific concepts and principles describing their impact on modern thought and life
- 10.86 describe the impact of cultural, technological and economic influences on the evolving nature of scientific thought and knowledge ◇

Science, Technology and Society

- 10.87 apply scientific skills and technological tools to address personal and societal needs ◇
- 10.88 engage in decision making activities and actions to resolve science-technology-society issues ◇
- 10.89 investigate and analyze the interdependence of science and technology ◇
- 10.90 describe the scientific concepts underlying technological innovations ◇
- 10.91 explore occupational opportunities in science and technology including the academic preparation necessary ◇

Computer and Technology

- 10.92 access, gather, store, retrieve, and organize data using hardware and software designed for these purposes ◇
- 10.93 collect, analyze and display data using computers and other electronic technology ◇
- 10.94 access Internet resources for a variety of purposes (e.g., research, exchange data, E-mail, and real-time

investigations) ◇

- 10.95 demonstrate skills in use of word processing, data bases, spreadsheets, graphics and telecommunications ◇
- 10.96 identify and solve problems with the appropriate technology ◇
- 10.97 incorporate correct grammar, spelling, vocabulary and graphical representation for both written and oral multimedia presentations ◇

Biology Eleven/Twelve

This is an advanced level course designed for students who have completed Coordinated and Thematic Science (CATS) 10 and desire a broader, in-depth study of the content found in many biological fields of endeavor. This course is designed to build upon and extend the Biology concepts, skills, and knowledge from the CATS 7-10 program. Students interested in health and scientific related careers will build and expand their laboratory skills and experiences. Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills.

Nature of Science

- B.1 participate in activities that consider alternate, changing points of view to stimulate the development of a sense of inquiry ◇
- B.2 recognize general limitations of science
- B.3 explain that science is composed of observations set in a testable framework of ideas
- B.4 conclude that science is a blend of creativity, logic, and mathematics

natural and human induced hazards and scientific and technological challenges) ◇

Scientific Processes/Thinking Skills

- B.8_{3,4,5,6,7,8,9,10} demonstrate science processes within a problem solving setting (e.g., observing, measuring, communicating, comparing, ordering, categorizing, classifying, relating, hypothesizing, predicting, inferring, and applying) ◇
- B.9_{3,4,5,6,7,8,9,10} organize qualitative and quantitative data into tables, diagrams, and/or graphs for analysis ◇
- B.10_{3,4,5,6,7,8,9,10} identify, analyze, and infer using patterns and relationships in data (e.g., cause and effect graphical analysis including interpretation and extrapolation) ◇
- B.11 use SI measurement (metric) ◇
- B.12 apply rational thinking processes that underlie scientific approaches to problem solving by employing critical thinking skills, imagination, and creativity while working individually and/or cooperatively ◇
- B.13 use the tools of science safely,

Scientific Attitudes/Habits of Mind

- B.5_{4,5,6,7,8,9,10} model and exhibit the skills, attitudes and values of scientific inquiry (e.g., curiosity, logic, objectivity, openness, skepticism, appreciation, diligence, integrity, fairness, creativity) ◇
- B.6 demonstrate ethical practices for science (e.g., established research protocol, accurate record keeping, replication of results and peer review) ◇
- B.7 apply scientific approaches to seek solutions for everyday problems (e.g., personal, community health, population growth, natural resources, environmental quality,

- accurately, and appropriately ◇
- B.14_{4,5,6,8,9} identify independent and dependent variables in experimental investigations
- B.15₉ manipulate variables to extend experimental activities
- B.16₉ **design, conduct, evaluate and revise experiments (e.g., identify questions and concepts that guide scientific investigations, design and conduct scientific investigations, use technology and mathematics to improve investigations and communications, formulate and revise scientific explanations and models using logic and evidence, recognize alternative explanations, communicate and defend a scientific argument, understand about scientific inquiry) ◇**

Laboratory Investigations/Hands-On Learning

- B.17 engage in active inquiries, investigations, and hands-on activities for a minimum of 50 percent of instructional time ◇
- B.18 properly and safely manipulate equipment, materials, chemicals, organisms, and models ◇
- B.19 conduct explorations in a variety of environments (e.g., laboratories, museums, libraries, parks and other outdoors locations) ◇
- B.20 use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research ◇

Science Themes and Subject Matter

- B.21_{9,10} **apply molecular genetic principles to explain energy patterns (e.g., DNA, RNA, recombinant DNA, role of enzymes, mutations, population dynamics)**
- B.22_{7,9} **illustrate the stages in the life cycle of pathogens and trace the causes of diseases**
- B.23_{7,8,9,10} **investigate the interrelationships**

- between anatomy and physiology of organisms**
- B.24_{7,8} **discuss external and internal factors that could damage cells, tissues, organs, or systems (e.g., carcinogens, fractures, noise, temperature)**
- B.25_{8,9,10} **trace matter and energy transfer that occurs during cellular respiration and photosynthesis**
- B.26 construct models of all cell types showing structure, function, and biochemical processes
- B.27 classify organisms into proper taxonomic groups by embryology, morphology, biochemistry, and karyotyping
- B.28 compare the diversity of living organisms by grouping organisms according to similar characteristics (e.g., Monerans, protists, fungi, plants, simple and complex animals)
- B.29 trace the embryological development of organisms
- B.30 investigate and analyze responses of the ecosystem to events that cause changes
- B.31_{8,9,10} **design and map a biome or ecosystem showing geographical features, climate, and organisms that will adapt to life conditions there**
- B.32 construct maps of the relationships between past and present life forms
- B.33 explore and identify the different areas of biology (e.g., entomology, ichthyology, ornithology, phycology, zoology)

Science History

- B.34 identify contributors to the scientific body of knowledge including their diverse cultures
- B.35 trace the historical development of key scientific concepts and principles describing their impact on modern thought and life
- B.36 describe the impact of cultural, technological and economic influences on the evolving nature of scientific thought and knowledge ◇

Science, Technology and Society

- B.37₉ **apply scientific skills and technological tools to address**

- personal and societal needs ◇
- B.38 engage in decision making activities and actions to resolve science-technology-society issues ◇
- B.39 investigate and analyze the interdependence of science and technology ◇
- B.40 describe the scientific concepts underlying technological innovations ◇
- B.41 explore occupational opportunities in science and technology including the academic preparation necessary ◇

Computer and Technology

- B.42 access, gather, store, retrieve, and organize data using hardware and software designed for these purposes ◇

- B.43 collect, analyze and display data using computers and other electronic technology ◇
- B.44 access Internet resources for a variety of purposes (e.g., research, exchange data, E-mail, and real-time investigations) ◇
- B.45 demonstrate skills in use of word processing, data bases, spreadsheets, graphics and telecommunications ◇
- B.46 identify and solve problems with the appropriate technology ◇
- B.47 incorporate correct grammar, spelling, vocabulary and graphical representation for both written and oral multimedia presentations ◇

Chemistry Eleven/Twelve

Chemistry Eleven/Twelve is the advanced study of matter, its composition, and its changes. Chemistry Eleven/Twelve builds on the foundation of chemical concepts developed in CATS Seven through CATS Ten. This course is designed to prepare a student for college chemistry, requiring a strong mathematical base. The relationship between chemistry concepts and mathematics will be emphasized. Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated into all activities.

Nature of Science

- C.1 participate in activities that consider alternate, changing points of view to stimulate the development of a sense of inquiry ◇
- C.2 recognize general limitations of science
- C.3 **explain that science is composed of observations set in a testable framework of ideas**
- C.4 conclude that science is a blend of creativity, logic, and mathematics

Scientific Attitudes/Habits of Mind

- C.5^{4,5,6,7,8,9,10} **model and exhibit the skills, attitudes, and/or values of scientific inquiry (e.g., curiosity, logic, objectivity, openness, skepticism, appreciation, diligence, integrity, fairness, creativity) ◇**

- C.6 demonstrate ethical practices for science (e.g., established research protocol, accurate record keeping, replication of results, and peer review) ◇
- C.7 **apply scientific approaches to seek solutions for everyday problems (e.g., personal, community health, population growth, natural resources, environmental quality, natural and human induced hazards and scientific and technological challenges) ◇**

Scientific Processes/Thinking Skills

- C.8^{3,4,5,6,7,8,9,10} **demonstrate science processes within a problem solving setting (e.g., observing, measuring, communicating, comparing, ordering, categorizing,**

classifying, relating, hypothesizing, predicting, inferring, and applying) ◇

C.9_{3,4,5,6,7,8,9,10} organize qualitative and quantitative data into tables, diagrams, and/or graphs for analysis ◇

C.10_{3,4,5,6,7,8,9,10} identify, analyze, and infer using patterns and relationships in data (e.g., cause and affect, graphical analysis including interpretation and extrapolation) ◇

C.11 use SI (metric) measurements

C.12 apply rational thinking processes that underlie scientific approaches to problem solving by employing critical thinking skills, imagination and creativity while working individually and/or cooperatively ◇

C.13 use the tools of science safely, accurately, and appropriately ◇

C.14_{4,5,6,8,9} identify independent and dependent variables in experimental investigations

C.15₉ manipulate variables to extend experimental activities

C.16₉ design, conduct, evaluate and revise experiments (e.g., identify questions and concepts that guide scientific investigations; design and conduct scientific investigations; use technology and mathematics to improve investigations and communications; formulate and revise scientific explanations and models using logic and evidence; recognize alternative explanations; communicate and defend a scientific argument; understand scientific inquiry) ◇

Laboratory Investigations/Hands-on Learning

C.17 engage in active inquiries, investigations, and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and laboratory skills ◇

C.18 properly and safely manipulate equipment, materials, chemicals,

organisms, and models ◇

C.19 conduct explorations in a variety of environments (e.g., laboratories, museums, libraries, parks and other outdoors locations) ◇

C.20 use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze and/or report data, interact with simulations, and research ◇

Science Themes and Subject Matter

C.21_{3,4,5,6,7,8,9,10} review of foundational chemical concepts including chemical symbols representing elements, ions, and formulas; balanced-equations; atomic structure including subatomic particles and atomic models; use of periodic table to locate and classify elements; states of matter; colligative properties; kinetic molecular theory; chemical and physical properties; and chemical and physical changes

C.22 write electron configurations and complete diagrams for electron position

C.23 relate the position and velocity of an electron to the Heisenberg Uncertainty Principle

C.24 identify four types of electron clouds (s, p, d, f)

C.25 evaluate the contributions of Planck, Einstein, and deBroglie to the wave-particle duality of light

C.26 research the contributions of Schrodinger's work to the development of a mathematical basis for the wave-mechanical view of hydrogen atom

C.27 describe the quantum number (n, l, m, s) for electrons

C.28 write electron dot structures for representative elements

C.29 associate electrons configuration of elements with element location on periodic table

C.30 analyze the periodic table to predict trends in atomic size, ionic size, electronegativity, ionization energy, and electron affinity

- C.31₉ using the periodic table, predict the type of bonding that occurs between atoms and differentiate among properties of ionic, covalent, and metallic bonds
- C.32₁₀ construct models to explain the structure and geometry of organic and inorganic molecules and the lattice structures of crystals
- C.33 use hybridization theory to explain bond angles in compounds
- C.34 define and describe the types of van der Waals forces and list the three factors contributing to them
- C.35 describe the formation of sigma and pi bonds
- C.36_{7,8,9,10} **predict the products and write balanced equations for the general types of chemical reactions**
- C.37 use the Avogadro constant to define the mole and to calculate molecular and molar mass as well as a molar volume
- C.38 use molar mass to calculate the molarity of solutions, percentage composition, and empirical formulas
- C.39 experimentally determine the formulas of hydrates
- C.40 do stoichiometric calculations including mass-mass, mass-volume, volume-volume to determine percent yield and heat of reaction
- C.41 use the ideal gas equation to calculate the molar mass of a gas
- C.42 identify the limiting reactant and predict the theoretical yield
- C.43 distinguish between the thermodynamic and kinetic stability
- C.44 experimentally determine the factors that influence the rate of reaction
- C.45 calculate equilibrium constants and concentration of products and reactants
- C.46 apply LeChatelier's principle to explain the effect of changes in concentration, pressure, volume, and temperature on an equilibrium system
- C.47 draw and label an energy-time diagram for both an endothermic and an exothermic reaction
- C.48 name and define acids and bases using Arrhenius, Bronsted-Lowery and Lewis definitions
- C.49 predict the products upon adding water to both acidic and basic anhydrides
- C.50 write and balance net ionic equations and calculate ionization constants for neutralization reactions
- C.51 solve problems using the solubility product constants
- C.52 calculate the pH and/or pOH for various solutions and relate to the pH scale
- C.53 conduct titrations and perform calculations for both acid-base and oxidation-reduction reactions
- C.54 define oxidation and reduction in terms of electron transfer within reactions
- C.55 construct electrolytic and voltaic cells, write and balance the half-cell reactions and calculate the cell voltage
- C.56 calculate the enthalpy change in reactions using the heat of formation
- C.57 evaluate the factors driving chemical reactions including enthalpy and entropy and their interrelationship
- C.58 calculate Gibb's Free Energy using enthalpy and entropy values
- C.59 calculate the rate of radioactive decay and apply to radiometric dating
- C.60 predict nuclear stability using proton-neutron diagrams
- C.61 distinguish between the hazards of ionizing and penetrating radiation
- C.62 research the application of nuclear technology (e.g., power plants, medicine, weaponry)
- C.63 compare and contrast fusion and fission reactions
- C.64 recognize simple organic functional groups and name simple organic compounds
- ### Science History
- C.65 identify contributors to the scientific body of knowledge including their diverse cultures

- C.66 trace the historical development of key scientific concepts and principles describing their impact on modern thought and life
- C.67 describe the impact of cultural, technological and economic influences on the evolving nature of scientific thought and knowledge ◇

Science, Technology, and Society

- C.68₉ apply scientific skills and technological tools to address personal and societal needs ◇
- C.69 engage in decision making activities and actions to resolve science-technology-society issues ◇
- C.70 investigate and analyze the interdependence of science and technology ◇
- C.71 describe the scientific concepts underlying technological innovations ◇
- C.72 explore occupational opportunities in science and technology

including the academic preparation necessary ◇

Computer and Technology

- C.73 access, gather, store, retrieve, and organize data using hardware and software designed for these purposes ◇
- C.74 collect, analyze and display data using computers and other electronic technology ◇
- C.75 access Internet resources for a variety of purposes (e.g., research, exchange data, E-mail, on-line chat and real-time, investigations) ◇
- C.76 demonstrate skills in use of word processing, data bases, spreadsheets, graphics and telecommunications ◇
- C.77 identify and solve problems with the appropriate technology ◇
- C.78 incorporate correct grammar, spelling, vocabulary and graphical representation for both written and oral multimedia presentations ◇

Chemistry-Technical/Conceptual

Chemistry -Technical/Conceptual is the study of matter, its composition, and its changes. This course is an alternative to a traditional college preparatory course. It emphasizes real life applications of chemical principles. Mathematical based problem solving is de-emphasized. Emphasis is placed on the important role chemistry plays in a student's personal life, career opportunities, environment, and society. Students will engage in active inquiries, investigations, and hand-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research laboratory skills. Safety instruction is integrated into all activities.

Nature of Science

- CTC.1 participate in activities that consider alternate, changing points of view to stimulate the development of a sense of inquiry ◇
- CTC.2 recognize general limitations of science
- CTC.3 **explain that science is composed of observations set in a testable framework of ideas**
- CTC.4 conclude that science is a blend of creativity, logic and mathematics

Scientific Attitudes/Habits of Mind

- CTC.5_{4,5,6,7,8,9,10} **model and exhibit the skills, attitudes and/or values of scientific inquiry (e.g., curiosity, logic, objectivity, openness, skepticism, appreciation, diligence, integrity, fairness, creativity) ◇**
- CTC.6 demonstrate ethical practices for science (e.g., established research protocol, accurate record keeping, replication of results and peer review) ◇
- CTC.7 **apply scientific approaches to**

seek solutions for everyday problems (e.g., personal, community health, population growth, natural resources, environmental quality, natural and human induced hazards and scientific and technological challenges) ◇

Scientific Processes/Thinking Skills

- CTC.8^{3,4,5,6,7,8,9,10} demonstrate science processes within a problem solving setting (e.g., observing, measuring, communicating, comparing, ordering, categorizing, classifying, relating, hypothesizing, predicting, inferring and applying) ◇
- CTC.9^{3,4,5,6,7,8,9,10} organize qualitative and quantitative data into tables, diagrams, and/or graphs for analysis ◇
- CTC.10^{3,4,5,6,7,8,9,10} identify, analyze, and infer using patterns and relationships in data (e.g., cause and affect graphical analysis including interpretation and extrapolation) ◇
- CTC.11 use SI (metric) measurements
- CTC.12 apply rational thinking processes that underlie scientific approaches to problem solving by employing critical thinking skills, imagination and creativity while working individually and/or cooperatively ◇
- CTC.13 use the tools of science safely, accurately and appropriately ◇
- CTC.14^{4,5,6,8,9} identify independent and dependent variables in experimental investigations
- CTC.15₉ manipulate variables to extend experimental activities
- CTC.16₉ design, conduct, evaluate and revise experiments (e.g., identify questions and concepts that guide scientific investigations, design and conduct scientific investigations, use technology and mathematics to improve investigations and communications, formulate and

revise scientific explanations and models using logic and evidence, recognize alternative explanations, communicate and defend a scientific argument, understand about scientific inquiry) ◇

Laboratory Investigations/Hands-on Learning

- CTC.17 engage in active inquiries, investigations and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and laboratory skills ◇
- CTC.18 properly and safely manipulate equipment, materials, chemicals, organisms and models ◇
- CTC.19 conduct explorations in a variety of environments (e.g., laboratories, museums, libraries, parks and other outdoors locations) ◇
- CTC.20 use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze and/or report data, interact with simulations, and research ◇

Science Themes and Subject Matter

- CTC.21^{3,4,5,6,7,8,9,10} review fundamental chemistry concepts including, parts of the atom, chemical and physical properties, chemical and physical changes, chemical formula, balancing equations, conservation of matter and energy, transfer or sharing of electrons during chemical reactions, periodic table, metallic and nonmetallic properties, ionic and covalent bonds, solubility, concentration, colloids, suspensions, acids, bases, neutralization reactions, pH, colligative properties, temperature, pressure, and volume relationships, nuclear fission, nuclear fusion
- CTC.22^{3,5,6,8} discuss the impact of water's unusual physical properties
- CTC.23 illustrate the concept of limiting reagent

- CTC.24^{6,7,8,9,10} identify the parts of the kinetic molecular theory and explain states of matter
- CTC.25 define the term mole, and calculate the molar mass of a compound when provided with its formula and the atomic masses of its elements
- CTC.26 calculate the percent by mass of a specific element in a given compound
- CTC.27 investigate the formation of elements from compounds using electrolysis to demonstrate an oxidation-reduction process as an example of metal purification from ores
- CTC.28 predict reactivity of metals using the activity series of metals
- CTC.29 describe the use of half-reactions to describe electrochemical cells
- CTC.30 show how to apply resource conservation techniques to a limited nonrenewable resource (e.g., reduce, reuse, and recycle)
- CTC.31 investigate the relationship of boiling point, density and viscosity to the number of carbon atoms and side chains in organic compounds
- CTC.32 draw and build structural models of the first ten alkanes
- CTC.33 collect data and calculate the heat of combustion for organic compounds (e.g., candle, food product)
- CTC.34 identify the functional groups for common alcohols, ethers, carboxylic acids, and esters
- CTC.35 model polymerization including addition and condensation reactions (e.g., plastics, esters, polysaccharides, proteins, fats)
- CTC.36 explain the benefits and consequences of energy conservation with respect to petroleum's ability to be used as a building material and/or fuel
- CTC.37 examine examples of nuclear technology that affect daily life
- CTC.38 balance nuclear equations and use them to describe natural radioactive decay
- CTC.39 compare penetrating power of alpha, beta, and gamma radiation

- and discuss safety factors
- CTC.40 simulate and explain half-life decay
- CTC.41 graph radiation vs. Time illustrating half-life of radioisotopes

Science History

- CTC.42 identify contributors to the scientific body of knowledge including their diverse cultures
- CTC.43 trace the historical development of key scientific concepts and principles describing their impact on modern thought and life
- CTC.44 describe the impact of cultural, technological and economic influences on the evolving nature of scientific thought and knowledge ◇

Science, Technology and Society

- CTC.45, apply scientific skills and technological tools to address personal and societal needs ◇
- CTC.46 engage in decision making activities and actions to resolve science-technology-society issues ◇
- CTC.47 investigate and analyze the interdependence of science and technology ◇
- CTC.48 describe the scientific concepts underlying technological innovations ◇
- CTC.49 explore occupational opportunities in science and technology including the academic preparation necessary ◇

Computer and Technology

- CTC.50 access, gather, store, retrieve, and organize data using hardware and software designed for these purposes ◇
- CTC.51 collect, analyze and display data using computers and other electronic technology ◇
- CTC.52 access Internet resources for a variety of purposes (e.g., research, exchange data, E-mail, on-line chat and real-time, investigations) ◇

CTC.53 demonstrate skills in use of word processing, data bases, spreadsheets, graphics and telecommunications ◇

CTC.54 identify and solve problems with the appropriate technology ◇

CTC.55 incorporate correct grammar, spelling, vocabulary and graphical representation for both written and oral multimedia presentations ◇

Environmental Earth Science Eleven/Twelve

As responsible citizens on this planet, students must be able to recognize their role as caretakers of the earth in order to protect its fragile environment. This is possible only if students have a deep understanding of the earth and its processes. Environmental Earth Science Eleven/Twelve builds on the fundamentals of geology, oceanography, meteorology and astronomy developed in CATS 7-10 in a rigorous and integrated manner with the traditional disciplines of biology, chemistry and physics where appropriate. As stewards of the earth, an emphasis on environment should be included within the traditional earth science disciplines. Ecology, economics, politics and social considerations all combine to help students develop an understanding of how humans effect and are effected by their environment. Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated into all activities.

Nature of Science

ES.1 recognize the open-ended structure of science

ES.2 participate in activities that consider alternate, changing points of view to stimulate the development of a sense of inquiry ◇

ES.3 recognize the limits of science

ES.4 recognize science as composed of observations set in a testable framework of ideas

ES.5 conclude that science is a blend of logic, mathematics, and imagination

Scientific Attitudes/Habits of Mind

ES.6^{4,5,6,7,8,9,10} model and exhibit the skills attitudes and/or values of scientific inquiry (e.g., curiosity, logic, objectivity, openness, skepticism, appreciation, diligence, integrity, fairness, creativity) ◇

ES.7 demonstrate ethical practices in science (e.g., established research protocol, accurate record keeping, replication of results, peer review)

ES.8 realize that science and technology affect the environment

ES.9 apply scientific information to

personal and societal decision making
ES.10 **apply scientific approaches to seek solutions for everyday problems** (e.g., personal community health, population growth, natural resources, environmental quality, natural and human induced hazards, and scientific and technological challenges) ◇

Scientific Processes/Thinking Skills

ES.11^{3,4,5,6,7,8,9,10} **demonstrate science processes within a problem solving setting** (e.g., observing, measuring, communicating, comparing, ordering, categorizing, relating, inferring, and applying) ◇

ES.12^{3,4,5,6,7,8,9,10} **organize qualitative and quantitative data into tables, diagrams, and/or graphs for analysis** ◇

ES.13^{3,4,5,6,7,8,9,10} **identify analyze and infer using patterns and relationships in data** (e.g., cause and effect, graphical analysis including interpretation, interpolation and extrapolation) ◇

ES.14 use SI (metric) measurements

- ES.15 apply rational thinking processes that underlie scientific approaches to problem solving by employing critical thinking skills, imagination and creativity while working individually and/or cooperatively ◇
- ES.16 use the tools of science safely, accurately, and appropriately ◇
- ES.17^{4,5,6,8,9} **identify independent and dependent variables in experimental investigations**
- ES.18₉ manipulate variables to extend experimental activities
- ES.19₉ **design, conduct, evaluate and revise experiments (e.g., identify questions and concepts that guide scientific investigations, design and conduct scientific investigations, use technology and mathematics to improve investigations and communications, formulate and revise scientific explanations and models using logic and evidence, recognize alternative explanations, communicate and defend a scientific argument, understand about scientific inquiry)**

Laboratory Investigations/Hands-on Learning

- ES.20 engage in active inquiries, investigations and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and laboratory skills ◇
- ES.21 conduct explorations in a variety of traditional and nontraditional educational environments (e.g., laboratories, museums, libraries, parks and other outdoor locations) ◇
- ES.22 use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze and/or report data, interact with simulations, and research ◇
- ES.23 properly and safely manipulate equipment, materials, chemicals, organisms and models) ◇

Science Themes and Subject Matter

- ES.24 review the following foundational

earth science concepts including rocks and minerals, properties of waves, constructing and interpreting weather maps, surface features found on maps, climatic relationships to biomes, use of data gathering instruments, temperature-phase change relationships

- ES.25 research theories concerning origins of the universe
- ES.26 **investigate the solar system including origin theories, comparing and contrasting the planets, planetary motions, and other celestial bodies**
- ES.27 explore the Earth-Sun-Moon relationships (e.g., moon phases, eclipses, relationship between tilt of the earth and seasonal changes as well as tides)
- ES.28 probe and explain stellar evolution, stellar types and distances
- ES.29 compare and contrast the different kinds of galaxies
- ES.30 develop a timeline outlining space exploration
- ES.31 investigate celestial bodies (e.g., composition, motions, origins of celestial objects such as quasars, pulsars, and black holes)
- ES.32 explain the relationships between location, navigation and time
- ES.33 summarize various methods used to study astronomy
- ES.34 identify components of the solid earth (e.g., shape, dimensions, and structure)
- ES.35 **identify the lithosphere, the hydrosphere, the atmosphere, and the biosphere**
- ES.36 describe earth's origin as it relates to the lithosphere, hydrosphere, and atmosphere
- ES.37 identify and describe the natural processes relating to the development of the solid earth from atomic structure through the rock cycle
- ES.38 identify and describe agents and processes of degradation (e.g., weathering by gravity, wind, water, and ice)
- ES.39 identify and describe tectonic forces
- ES.40 **understand the cause and effect relationships of degradational and**

- tectonic forces with respect to the dynamic earth and its surface
- ES.41 **construct and/or interpret information on topographic maps**
- ES.42 list, identify, and sequence eras, epochs, and periods in relation to earth history and geologic development
- ES.43 **identify, describe, and understand properties of our oceans (e.g., water composition, physical features of the ocean floor, and life within the oceans)**
- ES.44 compare and contrast ocean movements
- ES.45 identify and describe the structure of the atmosphere
- ES.46 **investigate and explain heat transfer in the atmosphere and its relationship to meteorological processes (e.g., pressure, winds, evaporation, condensation, and precipitation)**
- ES.47 **compare and contrast meteorological processes related to air masses, weather systems, and forecasting**
- ES.48 examine global change over time (e.g., climatic trends, fossil fuel depletion, global warming, ozone depletion)
- ES.49 describe the relationship between earth processes and natural disasters and draw conclusions concerning their human impact
- ES.50 explore the relationships between human consumption of natural resources and the stewardship responsibility for reclamations including disposal of hazardous and non-hazardous waste
- ES.51 investigate and describe in detail the physical and chemical properties of water
- ES.52 **explain common problems related to the conservation, use, supply and the quality of water**
- ES.53 explore the relationships between the extraction and use of natural resources and the impact on the environment
- ES.54 research alternative energy sources and possible impact
- ES.55 understand the fragile nature of the earth's major spheres (e.g.,

- lithosphere, hydrosphere, atmosphere, and biosphere)
- ES.56 research and explain how the political system influences environmental decisions
- ES.57 investigate which federal and state agencies have responsibility for environmental monitoring and actions
- ES.58 develop decision-making skills with respect to addressing environmental problems

Science History

- ES.59 identify contributors to the scientific body of knowledge including scientists both past and present as well as contributions from diverse cultures
- ES.60 recognize the historical development of significant scientific events and their impact on modern thought and life
- ES.61 be aware of the evolving nature of scientific thought and models by tracing the evolutionary development of several key scientific concepts and principles
- ES.62 understand and appreciate the evolving nature of scientific thought and knowledge and the patterns by which major scientific ideas change

Science, Technology, and Society

- ES.63 apply science and use technology to solve problems ◇
- ES.64 describe the costs and benefits of scientific skills and new technologies needed to address personal and societal needs
- ES.65 engage in decision making activities and actions to resolve science-technology-society issues ◇
- ES.66 recognize the scientific principles in technological applications (the why as well as the how)
- ES.67 explore the connections among science, technology, and career opportunities

Computer and Technology

- ES.68 access, gather, store, retrieve, and organize data using hardware and software designed for these purposes
◇

ES.69 access Internet resources for a variety of purposes (e.g., research, exchange data, E-mail, and real-time investigations) ◇

ES.70 demonstrate skills in use of word processing, data bases,

spreadsheets, graphics and telecommunications ◇

ES.71 identify and solve problems with the appropriate technology ◇

ES.72 incorporate correct grammar, spelling, vocabulary and graphical representation for both written and oral communication ◇

Human Anatomy and Physiology

This course is designed for those students wanting a depth of understanding in the structure and function of the human body. Focus will be at both micro and macro levels reviewing cellular functions biochemical processes, tissue interactions, organ systems, and the interaction of those system as it relates to the human organism. This course will be appropriate for college bound students as well as those choosing a health services career cluster. Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated into all activities.

Nature of Science

HAP.1 participate in activities that consider alternate, changing points of view to stimulate the development of a sense of inquiry ◇

HAP.2 recognize general limitations of science

HAP.3,11 **explain that science is composed of observations set in a testable framework of ideas**

HAP.4 conclude that science is a blend of creativity, logic and mathematics

Scientific Attitudes/Habits of Mind

HAP.5_{4,5,6,7,8,9,10} **model and exhibit the skills, attitudes and/or values of scientific inquiry (e.g., curiosity, logic, objectivity, openness, skepticism, appreciation, diligence, integrity, fairness, creativity) ◇**

HAP.6 demonstrate ethical practices for science (e.g., established research protocol, accurate record keeping, replication of results and peer review) ◇

HAP.7 **apply scientific approaches to seek solutions for everyday problems (e.g., personal, community health, population growth, natural resources, environmental quality, natural**

and human induced hazards and scientific and technological challenges) ◇

Scientific Processes/Thinking Skills

HAP.8_{3,4,5,6,7,8,9,10} **demonstrate science processes within a problem solving setting (e.g., observing, measuring, communicating, comparing, ordering, categorizing, classifying, relating, hypothesizing, predicting, inferring and applying) ◇**

HAP.9_{3,4,5,6,7,8,9,10} **organize qualitative and quantitative data into tables, diagrams, and/or graphs for analysis ◇**

HAP.10_{3,4,5,6,7,8,9,10} **identify, analyze, and infer using patterns and relationships in data (e.g., cause and affect graphical analysis including interpretation and extrapolation) ◇**

HAP.11 use SI (metric) measurements

HAP.12 **apply rational thinking processes that underlie scientific approaches to problem solving by employing critical thinking skills, imagination and creativity while working individually and/or cooperatively ◇**

HAP.13 use the tools of science safely,

- accurately and appropriately ◇
- HAP.14^{4,5,6,8,9} identify independent and dependent variables in experimental investigations
- HAP.15₉ manipulate variables to extend experimental activities
- HAP.16₉ design, conduct, evaluate and revise experiments (e.g., identify questions and concepts that guide scientific investigations, design and conduct scientific investigations, use technology and mathematics to improve investigations and communications, formulate and revise scientific explanations and models using logic and evidence, recognize alternative explanations, communicate and defend a scientific argument, understand about scientific inquiry) ◇

Laboratory Investigations/Hands-on Learning

- HAP.17 engage in active inquiries, investigations and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and laboratory skills ◇
- HAP.18 properly and safely manipulate equipment, materials, chemicals, organisms and models ◇
- HAP.19 conduct explorations in a variety of environments (e.g., laboratories, museums, libraries, parks and other outdoors locations) ◇
- HAP.20 use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze and/or report data, interact with simulations, and research ◇

Science Themes and Subject Matter

- HAP.21^{7,8,9,10} describe the organizational levels, interdependency and the interaction of cells, tissues, organs, organ systems
- HAP.22 apply the importance of ionic and covalent bonding to the chemical processes in the

human body

- HAP.23 summarize the structure and function of organelles within a typical human body cell
- HAP.24 categorize, by structure and function, the various types of human tissue (e.g., cardiac, epithelial, connective, etc.)
- HAP.25 relate how bone tissue is important to the development of the human skeleton
- HAP.26 relate the various joints to their muscle movement
- HAP.27^{7,8,9,10} recognize the structure and relationship among skeletal, neural, and muscular systems
- HAP.28 classify and describe the structure and function of various types of neurons
- HAP.29 examine how the autonomic nervous system controls other organs and systems
- HAP.30 examine how food provides nutrition to tissues through its breakdown by the digestive system, into carbohydrates, fats, proteins, vitamins, and minerals
- HAP.31 discuss the specific role of enzymes and hormones to bodily functions
- HAP.32^{7,8,9,10} explain how the respiratory system is significant to communication, gas exchange, and cellular respiration
- HAP.33 identify the cellular processes and the energy and nutritional requirements needed to maintain human metabolism
- HAP.34 recognize the relationship of the excretory system to other organs and systems to rid the human body of its wastes
- HAP.35^{7,8,9,10} explain the structure and function of the male and female reproductive systems and how they relate to human growth and development
- HAP.36 trace the transfer of matter and energy in chemical molecular processes in the human body
- HAP.37^{8,9,10} compare and contrast the purposes, processes and outcomes of cellular meiosis and mitosis
- HAP.38^{7,9} describe potential system failures

in the human body due to genetic, nutritional, operational, disease, or environmental influences

HAP.39^{7,8,9,10} relate the structure of the integumentary system to its function as a sensory organ, environmental barrier, and temperature regulator

HAP.40¹⁰ **analyze the change in DNA activity and how it affects the control of protein synthesis and human inheritance**

HAP.41 demonstrate the directional terminology used to locate structures in the human body (e.g., dorsal, bilateral, sagittal, etc.)

HAP.42¹⁰ illustrate how transport mechanisms in cells, tissues, and/or organs depend on osmosis and mixture gradients

HAP.43 show the mechanism of muscle contraction on a micro and macro level

HAP.44 apply the knowledge of the structure of the ear and eye to their function/dysfunction of environmental perception

HAP.45^{7,8,9,10} illustrate the structure of the circulatory and lymph systems and the function of blood to the role of transportation, cellular support and defense

Science History

HAP.46 identify contributors to the scientific body of knowledge including their diverse cultures

HAP.47 trace the historical development of key scientific concepts and principles describing their impact on modern thought and life

HAP.48 describe the impact of cultural, technological and economic influences on the evolving nature of scientific thought and knowledge ◇

Science, Technology and Society

HAP.49⁹ apply scientific skills and technological tools to address personal and societal needs ◇

HAP.50 engage in decision making activities and actions to resolve science-technology-society issues ◇

HAP.51 investigate and analyze the interdependence of science and technology ◇

HAP.52 describe the scientific concepts underlying technological innovations ◇

HAP.53 explore occupational opportunities in science and technology including the academic preparation necessary ◇

Computer and Technology

HAP.54 access, gather, store, retrieve, and organize data using hardware and software designed for these purposes ◇

HAP.55 collect, analyze and display data using computers and other electronic technology ◇

HAP.56 access Internet resources for a variety of purposes (e.g., research, exchange data, E-mail, and real-time investigations) ◇

HAP.57 demonstrate skills in use of word processing, data bases, spreadsheets, graphics and telecommunications ◇

HAP.58 identify and solve problems with the appropriate technology ◇

HAP.59 incorporate correct grammar, spelling, vocabulary and graphical representation for both written and oral multimedia presentations ◇

Physics Eleven/Twelve

A college preparatory course, Physics Eleven/Twelve is a laboratory driven, advanced study of nature's universal laws with emphasis on process skills. Physics Eleven/Twelve builds on the foundation of physics concepts developed in CATS Seven through CATS Ten. The course is organized around the content areas of kinematics, dynamics, thermodynamics, light and optics, electricity and magnetism, and modern physics. SI (metric) units of measurement will be used. Students will engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated into all activities.

Nature of Science

- P.1 participate in activities that consider alternate, changing points of view to stimulate the development of a sense of inquiry
◇
- P.2 recognize general limitations of science
- P.3 explain that science is composed of observations set in a testable framework of ideas
- P.4 conclude that science is a blend of creativity, logic, and mathematics

Scientific Attitudes/Habits of Mind

- P.5_{4,5,6,7,8,9,10} model and exhibit the skills, attitudes, and/or values of scientific inquiry (e.g., curiosity, logic, objectivity, openness, skepticism, appreciation, diligence, integrity, fairness, creativity) ◇
- P.6 demonstrate ethical practices for science (e.g., established research protocol, accurate record keeping, replication of results, and peer review) ◇
- P.7 apply scientific approaches to seek solutions for everyday problems (e.g., personal, community health, population growth, natural resources, environmental quality, natural and human induced hazards, and scientific and technological challenges) ◇

Scientific Processes/Thinking Skills

- P.8_{3,4,5,6,7,8,9,10} demonstrate science processes within a problem solving setting (e.g., observing,

measuring, communicating, comparing, ordering, categorizing, classifying, relating, hypothesizing, predicting, inferring, and applying) ◇

- P.9_{3,4,5,6,7,8,9,10} organize qualitative and quantitative data into tables, diagrams, and/or graphs for analysis ◇

- P.10_{3,4,5,6,7,8,9,10} identify, analyze, and infer using patterns and relationships in data (e.g., cause and affect, graphical analysis including interpretation and extrapolation) ◇

- P.11 use SI (metric) measurements
- P.12 apply rational thinking processes that underlie scientific approaches to problem solving by employing critical thinking skills, imagination, and creativity while working individually and/or cooperatively ◇
- P.13 use the tools of science safely, accurately, and appropriately ◇
- P.14_{4,5,6,8,9} identify independent and dependent variables in experimental investigations
- P.15₉ manipulate variables to extend experimental activities
- P.16₉ design, conduct, evaluate and revise experiments (e.g., identify questions and concepts that guide scientific investigations; design and conduct scientific investigations; use technology and mathematics to improve investigations and communications; formulate and revise scientific explanations and models using logic and

evidence; recognize alternative explanations; communicate and defend a scientific argument; understand scientific inquiry) ◇

Laboratory Investigations/Hands-on Learning

- P.17 engage in active inquiries, investigations, and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and laboratory skills ◇
- P.18 properly and safely manipulate equipment, materials, chemicals, organisms, and models ◇
- P.19 conduct explorations in a variety of environments (e.g., laboratories, museums, libraries, parks and other outdoors locations) ◇
- P.20 use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze and/or report data, interact with simulations, and research ◇

Science Themes and Subject Matter

- P.21 investigate, analyze, synthesize, and evaluate the concepts of kinematics (e.g., distance, time, velocity, acceleration)
- P.22 investigate, analyze, synthesize, and evaluate the concepts of dynamics (e.g., force, impulse, gravitation, conservation of energy, conservation of momentum, Newton's Laws)
- P.23 investigate, analyze, synthesize and evaluate the concepts of thermodynamics (e.g., kinetic molecular theory, heat exchange, work)
- P.24 investigate, analyze, synthesize, and evaluate the concepts of light and optics (e.g., waves, behavior of light, ray diagrams)
- P.25 investigate, analyze, synthesize and evaluate the concepts of electricity and magnetism (e.g., electrostatics, circuits, magnetic effects, electronic devices)

- P.26 investigate, analyze, synthesize, and evaluate the concepts of modern physics (e.g., atomic structure, nuclear changes, high energy physics)

Science History

- P.27 identify contributors to the scientific body of knowledge including their diverse cultures
- P.28 trace the historical development of key scientific concepts and principles describing their impact on modern thought and life
- P.29 describe the impact of cultural, technological, and economic influences on the evolving nature of scientific thought and knowledge ◇

Science, Technology, and Society

- P.30_a apply scientific skills and technological tools to address personal and societal needs ◇
- P.31 engage in decision making activities and actions to resolve science-technology-society issues ◇
- P.32 investigate and analyze the interdependence of science and technology ◇
- P.33 describe the scientific concepts underlying technological innovations ◇
- P.34 explore occupational opportunities in science and technology including the academic preparation necessary ◇

Computer and Technology

- P.35 access, gather, store, retrieve, and organize data using hardware and software designed for these purposes ◇
- P.36 collect, analyze and display data using computers and other electronic technology ◇
- P.37 access Internet resources for a variety of purposes (e.g., research, exchange data, E-mail, and real-time investigations) ◇
- P.38 demonstrate skills in use of word processing, data bases,

- spreadsheets, graphics and telecommunications ◇
- P.39 identify and solve problems with the appropriate technology ◇
- P.40 incorporate correct grammar,

spelling, vocabulary and graphical representation for both written and oral multimedia presentations ◇

Physics-Technical/Conceptual

Physics- Technical is a course designed to prepare students for technical careers. Basic physics principles are dealt with in a thematic approach. Principles are applied to four energy systems: mechanical, fluid, thermal, and electrical that make up both simple and complex technological devices and equipment. The course also emphasizes the analogies in mechanical, fluid, thermal, and electrical systems. Incorporated in the instruction is the mathematics needed to understand and apply the principles. Refer to objectives PT.21 - PT.24.

Physics- Conceptual is an alternative to the traditional mathematical approach to physics. Emphasis will be on the concepts which underlie the natural laws of the universe. Mathematics will be de-emphasized. Laboratory work will require traditional physics measurements to be made. SI (metric) units of measurement will be used. Refer to objectives PC.25 - PC.30.

Students in Physics-Technical or Physics- Conceptual will engage in active inquiries, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated into all activities.

Nature of Science

- PTC.1 participate in activities that consider alternate, changing points of view to stimulate the development of a sense of inquiry ◇
- PTC.2 recognize general limitations of science
- PTC.3 explain that science is composed of observations set in a testable framework of ideas
- PTC.4 conclude that science is a blend of creativity, logic, and mathematics

replication of results, and peer review)◇

- PTC.7 apply scientific approaches to seek solutions for everyday problems (e.g., personal, community health, population growth, natural resources, environmental quality, natural and human induced hazards, and scientific and technological challenges) ◇

Scientific Attitudes/Habits of Mind

- PTC.5_{4,5,6,7,8,9,10} model and exhibit the skills, attitudes, and/or values of scientific inquiry (e.g., curiosity, logic, objectivity, openness, skepticism, appreciation, diligence, integrity, fairness, creativity) ◇
- PTC.6 demonstrate ethical practices for science (e.g., established research protocol, accurate record keeping,

Scientific Processes/Thinking Skills

- PTC.8_{3,4,5,6,7,8,9,10} demonstrate science processes within a problem solving setting (e.g., observing, measuring, communicating, comparing, ordering, categorizing, classifying, relating, hypothesizing, predicting, inferring, and applying) ◇
- PTC.9_{3,4,5,6,7,8,9,10} organize qualitative and quantitative data into tables, diagrams, and/or graphs for analysis◇
- PTC.10_{3,4,5,6,7,8,9,10} identify, analyze, and

infer using patterns and relationships in data (e.g., cause and affect, graphical analysis including interpretation and extrapolation) ◇

- PTC.11 use SI (metric) measurements
- PTC.12 apply rational thinking processes that underlie scientific approaches to problem solving by employing critical thinking skills, imagination, and creativity while working individually and/or cooperatively ◇
- PTC.13 use the tools of science safely, accurately and appropriately ◇
- PTC.14_{4,5,6,8,9} identify independent and dependent variables in experimental investigations
- PTC.15₉ manipulate variables to extend experimental activities
- PTC.16₉ **design, conduct, evaluate and revise experiments (e.g., identify questions and concepts that guide scientific investigations; design and conduct scientific investigations; use technology and mathematics to improve investigations and communications; formulate and revise scientific explanations and models using logic and evidence; recognize alternative explanations; communicate and defend a scientific argument; understand scientific inquiry) ◇**

Laboratory Investigations/Hands-on Learning

- PTC.17 engage in active inquiries, investigations, and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and laboratory skills ◇
- PTC.18 properly and safely manipulate equipment, materials, chemicals, organisms, and models ◇
- PTC.19 conduct explorations in a variety of environments (e.g., laboratories, museums, libraries, parks and other outdoors locations) ◇
- PTC.20 use computers and other electronic technologies (e.g., computer, CBL, probe interfaces,

laser discs) to collect, analyze and/or report data, interact with simulations, and research ◇

Science Themes and Subject Matter

- PT.21 qualitative and quantitative analysis of mechanical systems (e.g., force, work, rate, resistance, energy, power, force transformations)
- PT.22 qualitative and quantitative analysis of fluid systems (e.g., pressure, work, rate, resistance, energy, power, force transformations)
- PT.23 qualitative and quantitative analysis of electrical systems (e.g., voltage, work, rate, resistance, energy, power, force transformations)
- PT.24 qualitative and quantitative analysis of thermal systems (e.g., temperature, rate, resistance, energy)
- PC.25 investigate and analyze the concepts of kinematics (e.g., distance, time, velocity, acceleration)
- PC.26 investigate and analyze the concepts of dynamics (e.g., force, impulse, gravitation, conservation of energy, conservation of momentum, Newton's Laws)
- PC.27 investigate and analyze the concepts of thermodynamics (e.g., kinetic molecular theory, heat exchange, work)
- PC.28 investigate and analyze concepts of light and optics (e.g., waves, behavior of light, ray diagrams)
- PC.29 investigate and analyze concepts of electricity and magnetism (e.g., electrostatics, circuits, magnetic effects, electronic devices)
- PC.30 investigate and analyze concepts of modern physics (e.g., atomic structure, nuclear changes, high energy physics)

Science History

- PTC.31 identify contributors to the scientific body of knowledge

- PTC.32 including their diverse cultures
trace the historical development of
key scientific concepts and
principles describing their impact
on modern thought and life
- PTC.33 describe the impact of cultural,
technological, and economic
influences on the evolving nature
of scientific thought and
knowledge ◇

Science, Technology, and Society

- PTC.34, apply scientific skills and
technological tools to address
personal and societal needs ◇
- PTC.35 engage in decision making
activities and actions to resolve
science-technology-society issues
◇
- PTC.36 investigate and analyze the
interdependence of science and
technology ◇
- PTC.37 describe the scientific concepts
underlying technological
innovations ◇
- PTC.38 explore occupational opportunities
in science and technology
including the academic preparation
necessary ◇

Computer and Technology

- PTC.39 access, gather, store, retrieve, and
organize data using hardware and
software designed for these
purposes ◇
- PTC.40 collect, analyze and display data
using computers and other
electronic technology ◇
- PTC.41 access Internet resources for a
variety of purposes (e.g., research,
exchange data, E-mail, and real-
time investigations) ◇
- PTC.42 demonstrate skills in use of word
processing, data bases,
spreadsheets, graphics and
telecommunications ◇
- PTC.43 identify and solve problems with
the appropriate technology ◇
- PTC.44 incorporate correct grammar,
spelling, vocabulary and graphical
representation for both written and
oral multimedia presentations ◇

INSTRUCTIONAL GOALS AND OBJECTIVES

POLICY 2520

COMMENT LOG

September 13, 1996 - October 31, 1996

ACTION

TYPE

N = No Response
NA = Not Accepted
A = Accepted

- = Negative
+ = Positive
0 = Neutral

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General				
10/04/96	Karen Larry WVDE	It would be helpful to include the names of the policies being repealed/replaced along with the appropriate numbers.		
10/17/96	Hampshire County Board of Education	Well done! An excellent document. Requirement for one art credit will cause us to employ additional staff.		
10/17/96	Hillsboro School Barbara Lewis Pocahontas County	We feel strongly that many objectives are not developmentally appropriate for the age level as they are too advanced.		
10/17/96	Jefferson Elem. School Debbie Nile Hancock County	Congratulations! To be assured that state standardized testing will align with this curriculum gives me renewed hope in our educational system. Printing the objectives to be assessed in bold print is very helpful to teachers in planning what they should present and teach for mastery.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-2. General (Continued)				
10/17/96	Jefferson Elem. School Hancock County Debbie Nile	Here's another suggestion. It could be very helpful if Stanford would publish a "sample" booklet for practice in which children can learn the particular format of the test. CTBS was notorious for changing format several times within several pages. The teacher can be confident that it was not the directions within the test that skewed the results.		
10/23/96	Allyson Schoenlein Cabell County Schools	Subscripts are supposed to indicate other grades where a subject's objectives are taught. Often, the grade itself is listed too, but not always. Move to make these consistent.		
10/21/96	Wright Denny School Fifth Grade Teachers Jefferson County	It is a physical impossibility to be able to teach all required learning objectives by test time. It does not take into account the mental and physical maturity of the fifth grade student.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
10/04/96	Karen Larry WVDE	"As quickly as possible" is open for interpretation. Adding a specific date eliminates suspicion and/or interpretation. What is a realistic date???		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-3. Incorporation by Reference				
		INSTRUCTIONAL GOALS English Language Arts		
10/04/96	Karen Larry WVDE	Under the headings "Language" and "Study Skills" the verb "should" appear four times. This verb is much weaker than "will" which is the verb of choice in all others instances. I suggest changing the four "should"s to "will" to give greater strength to the sentences. I sincerely hope that some accountability exists somewhere for administrators, teachers, instructional aides, and students to <u>use</u> grammatically correct language. Until the correct usage is <u>required</u> , we will continue to have the problems we have had for years.	A	
10/23/96	Allyson Schoenlein Cabell County Schools	1) Add semicolon middle of line 4, paragraph 1. 2) drop column two down one line to even up at top. 3) under "Study Skills" the last line should include the words "for students" between "competency" and to.	A A A	
10/23/96	Lewis N. McManus 2106 Kanawha Blvd. E Charleston, WV 25311	"The social studies' curriculum prepares students for gainful employment, post secondary education, and/or college" -- add the following after college: and to be lifelong good citizens of the community.	A	

Date Received	Individual/ Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Mathematics				
10/09/96	No Name	The mathematics objectives are many and varied, however, they do fall into the boundaries and levels that are appropriate for the learning aptitudes of third grade students. We teachers must strive to promote better English language arts and mathematics skills to allow our students to compete in today's society. To do this, we must be given as much time in our teaching day as possible to devote our attention to these areas.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Social Studies				
10/22/96	Terry White Ansted Middle School Fayette County	I do not like the fact that government/civics is being taught in any one year as a complete course. In a democracy, this is terrible. We will be turning out unprepared citizens to run our state and country. A piddling amount in each grade is not an acceptable substitute.		

Date Received	Individual/ Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Process/Workplace Goals				
10/04/96	Karen Larry WVDE	The six goals cited in the introductory narrative do not correspond to the titles of the six areas following the narrative. If they are to be one and the same, the wording and the ordering need to be the same. Spacing problem at bottom of column one. Should not the word "grade" at the very end of the last paragraph be "grades?"	NA	
		Process/Workplace Objectives		
10/04/96	Karen Larry WVDE	No place exists for comments on this section. They might be better placed in the section of the policy designated as objectives. Perhaps a title page dividing each section would also help the usefulness of the document. Since each of these objectives reads as through it completes the stem "The student will," it would be helpful to the reader to see that sentence stem under each heading. If each objective does complete the sentence stem "The student will," then PW.8 needs to read "demonstrate" rather than "demonstrates." Each objective is a sentence. Use a period at the end of each item as is in PW22.	NA NA NA	

INSTRUCTIONAL GOALS

Process/Workplace Goals

[illegible]

10/04/96	Karen Larry WVDE	Process/Workplace Objectives No place exists for comments on this section. They might be better placed in the section of the policy designated as objectives. Perhaps a title page dividing each section would also help the usefulness of the document. Since each of these objectives reads as through it completes the stem "The student will," it would be helpful to the reader to see that sentence stem under each heading. If each objective does complete the sentence stem "The student will," then PW.8 needs to read "demonstrate" rather than "demonstrates." Each objective is a sentence. Use a period at the end of each item as is in PW22.	NA	NA	NA

Process/Workplace Objectives

[illegible]

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood K-2				
10/04/96	Karen Larry WVDE	Uses same introductory sentence as 3-4 and 5-8, ... "mastery of the instructional objectives." I believe each sentence needs an addition for clarity -- "mastery of the instructional objectives as outlined in State Policy 2520."	A NA	
10/25/96	Linda Mainland Concord College	I recommend a foreign language introduction	N	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood 3-4				
10/04/96	Karen Larry WVDE	Uses same introductory sentence as K-2 and 5-8, "...mastery of the instructional objectives." I believe each sentence needs an addition for clarity -- "mastery of the instructional objectives as outlined in State Policy 2520."	A	
10/23/96	Allyson Schoenlein Cabell County Schools	All brain research indicates the need to instruct in foreign languages during the PRIMARY years. By waiting until adolescence, even at middle school years, the brain will have reallocated cells in the language center and the window of opportunity will be closing. Consider moving language study even earlier.	NA	

Date Received	Individual/Organization	Comment	Action/Type	Rationale

PROGRAM CHARTS
Middle Childhood 5-8

10/04/96	Karen Larry WVDE	"This course must be taken during grade seven or eight." "Career Exploration" is not a course so cannot be referred to as such. Perhaps, "Career Exploration shall take place during grade seven or eight." I suggest we designate the language as "conversational foreign language" so as not to mean a study of the grammar and language structure which is usually part of a later study. In addition, if the intent is that all students take this study, that has been clearly stated. Perhaps, Beginning,"	A	
10/21/96	Clay County	Concern over core areas to be taught daily at middle school level (5-8) will not support block schedule.	A	Science may be taught on a block schedule so long as an equivalent time is allotted as on a daily basis.
10/28/96	Judy Hetzer, Principal Ravenswood Middle Jackson County	Flexible block scheduling will be difficult to do with requiring teaching of social studies and science every day. For example in our school we do 90 days integrated language arts (daily), 90 days math (daily), 90 days (social studies or science) daily. We alternate social studies and science every six weeks. It works well. Timewise, we give each subject science/social studies the same as if we were teaching each for a 45 day period daily. Could we have some flexibility here?	NA	Science on block scheduling will need to be equivalent to teaching on a daily basis. Instructional goals and objectives in Science will not be able to be met unless an equivalent schedule to teaching on a daily basis is utilized (90 days on block or 180 days yearly).

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Adolescent 9-12				
10/04/96	Karen Larry WVDE	Foreign Languages II - two courses This is still misplaced! This particular chart lists requirements for graduation for all students. No reason exists to include a requirement for <u>some</u> students. Just eliminate it. The footnote also needs eliminated. Footnote* - "applied math I and II" are names of particular courses; therefore, they need capitalized - Applied Math I and II. Ditto Algebra I not "algebra I." Footnote***"Prior to students selecting career majors <u>add a comma after "majors."</u> What are "opportunities for career decision making orientation?" This is unclear.	A	
10/21/96	John Rose Associate Superintendent Jefferson County Schools	Sequence of social studies teaching both ninth and tenth grade students the same curriculum for one year.		
10/25/96	Mark Fawcett Counselor Magnolia High School Wetzel County	Too many specific requirements will eliminate access for students to band, choir, art, and many other electives. Two credits of Algebra I and higher is not realistic for all students.		

Date Received	Individual Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Adolescent 9-12 (continued)				
10/25/96	Dennis Bombardiere Social Studies Teacher Fairmont High School	I feel that the change in the ninth and tenth grade courses would be a move in the wrong direction. I feel that it would be detrimental to change from chronologically sequenced social studies classes. I would suggest the following - World Studies to 1588 (Spanish Armada), US and World Studies 1588-1900, twentieth century studies. Consider the importance of chronology to the learning process of our students.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Core Electives 9-12				
10/04/96	Karen Larry WVDE	If counties are to determine electives, why do we have these lists? What are these lists, anyway? If the electives in the "Core Electives" list must be offered, this, needs stated clearly right up front. What are "Non-core Electives?" No definition exists for this term. An explanation of this term needs to accompany the chart. Again, must these classes be offered?	N	
10/23/96	Allyson Schoenlein Cabell County Schools	Unless the state agrees to pay the bill for A.P. testing, it should not include the exam.	A	
10/25/96	Linda Mainland Concord College	I recommend Social Studies/ Geography elective.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL PRACTICES Kindergarten - Twelve				
10/04/96	Karen Larry WVDE	If the items in this section complete the sentence stem "The teacher will," it would be helpful to have that sentence stem clearly printed at the top of the page. Determine whether the document is using a comma before the "and" in a series or not. Whichever is the choice, be consistent. Some sentences use the comma. Others do not. If the comma is going to be used, it needs added: (A few other areas needing correction are also included.) IP.1 after "progress" IP.3 after "...practice after each step" Use a semicolon after "checking for understanding" after "for understanding; then" IP.4 after "...establishing rules, procedures: IP.5 after "...and emotional, social" IP.6 after "...systematically, critically" after "...human time line" IP.8 after "...grades, comments" IP.9 replace the : after "credit" to a period and replace "a" with "A." "teacher-made test" should be teacher-made tests."	NA A A NA A A A A	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL PRACTICES Kindergarten - Twelve (continued)				
10/04/96	Karen Larry WVDE	IP.10 after “..teaching, practicing” IP.12 after “..interpretation of prose or poetry” IP.13 after “..with a colleague” IP.14 after “..addressing local, national” IP.16 after “..accepting supervision” IP.17 after “..perseverance, honesty” Because this entire document is written in third person, the use of “you” in this item need corrected. Change “model for students what you expect from them.” to “model for students what is expected of them.” IP.18 after “...own progress”	A	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
DOCUMENT GUIDE				
10/04/96	Karen Larry WVDE	Boldfacing the words "Boldface font" would provide an example of what is stated.	A	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES GRADES K-8 Kindergarten				
10/04/96	Karen Larry WVDE	Wow, there is no doubt we are asking teachers to teach the test! The same comment for all the areas: If the item is completing a sentence stem, printing that sentence stem somewhere at the beginning makes reading easier. Also add a period at the end of each item since the item is a sentence. Run a check on the use of the comma in a series.	NA	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten -Social Studies				
10/17/96	Tony Williams, Ed.D. Marshall University	I do not feel that West Virginia Studies at elementary school should be a K-4 program but continue to be taught as a separate subject in fourth grade.		
10/23/96	Allyson Schoenlein Cabell County Schools	K-4 integration of WV Studies, WV1-20 should appear there if counties are to know they have this choice, not at the end of fourth grade social studies.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade One - English Language Arts				
10/17/96	Hillsboro School Barbara Lewis Pocahontas County	We feel that the following objectives are not developmentally appropriate for the assigned age levels. It is not realistic to expect the students to perform at these levels. 1.79, 1.83, 1.84, 1.87, 1.88, 1.89, and 1.109	NA	
10/17/96	Jefferson Elem. School Hancock County Debbie Nile	Reading Comprehension - 1.33 -- too difficult Study Skills - 1.109 - guide words very difficult	NA	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade One - English Language Arts				
10/17/96	Hillsboro School Barbara Lewis Pocahontas County	We feel that the following objectives are not developmentally appropriate for the assigned age levels. It is not realistic to expect the students to perform at these levels. 1.79, 1.83, 1.84, 1.87, 1.88, 1.89, and 1.109	NA	
10/17/96	Jefferson Elem. School Hancock County Debbie Nile	Reading Comprehension - 1.33 -- too difficult Study Skills - 1.109 - guide words very difficult	NA	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade One - Mathematics				
10/17/96	Hillsboro School Barbara Lewis Pocahontas County	We feel that objective 1.1 is not developmentally appropriate for the assigned age levels. It is not realistic to expect the students to perform at this level.	NA	
10/17/96	Jefferson Elem. School Debbie Nile Hancock County	1.12 - Count to 999 and name numbers -- <u>too</u> difficult	NA	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade One - Social Studies				
10/17/96	Jefferson Elem. School Debbie Nile Hancock County	I.33 - too difficult for first grade	NA	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade One - Science				
10/17/96	Jefferson Elem. School Debbie Nile Hancock County	1.71 - who will supply software? 1.79 - not available presently		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Two - English Language Arts				
10/17/96	Hillsboro School Barbara Lewis Pocahontas County	We feel that the following objectives are not developmentally appropriate for the assigned age levels. It is not realistic to expect the students to perform at these levels. 2.19 (irony), 2.73, 2.74, 2.82, 2.84, 2.85, 2.86, 2.88, and 2.108	A 2.86 Only	
10/17/96	Jefferson Elem. School Debbie Nile Hancock County	2.108 - Study Skills - Teaching guide words is not appropriate for second grade. 2.123 - CD ROM - not available to do this regularly	NA	
10/23/96	Allyson Schoenlein Cabell County Schools	I applaud the more diligent requirements in social studies at primary level!		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8				
Grade Two - Social Studies				
10/17/96	Jefferson Elem. School Debbie Nile Hancock County	Computer/Technology - 2.30 - not available software for graphs		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Three - Social Studies				
10/17/96	Hillsboro School Barbara Lewis Pocahontas County	We feel that the following objectives are not developmentally appropriate for the assigned age levels. It is not realistic to expect the students to perform at these levels. 3.1, 3.2, 3.15, 3.16, 3.17, 3.18, 3.44		

Date Received	Individual/ Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Four - Math				
10/17/96	Hillsboro School Barbara Lewis Pocahontas County	We feel that the following objectives are not developmentally appropriate for the assigned age levels. It is not realistic to expect the students to perform at these levels. 4.20, 4.21, 4.32, 4.33 (acute and obtuse). We feel that "too much, too soon" is a large part of this problem.	NA	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Four - Social Studies				
10/17/96	Hillsboro School Barbara Lewis Pocahontas County	We feel that the following objectives are not developmentally appropriate for the assigned age levels. It is not realistic to expect the students to perform at these levels. 4.1, 4.7, 4.8, 4.17, 4.19 - introduction of these are fine, but students shouldn't be tested. We feel that "too much, too soon" is a large part of this problem.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Four - Science				
10/23/96	Wright Denny School Fifth Grade Teachers Jefferson County	Electricity and magnetism does not provide enough information to facilitate activities.	NA	Electricity and magnetism concepts spirals up from grades 1-4. 1.37 2.34 3.44 4.33 1.42 2.39 3.47 4.46 4.49 4.56 lead to: 5.41 4.43 5.44
		Too much for one year.	NA	Objectives are assessed on Stanford 9.

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Five - English Language Arts				
10/23/96	Wright Denny School Fifth Grade Teachers Jefferson County	Acceptable.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Five - Mathematics				
10/23/96	Wright Denny School Fifth Grade Teachers Jefferson County	Front-end estimation is a difficult concept as well as being confusing to a student. #5.17 - is not covered or understood (we need clarification!).		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Five - Social Studies				
10/23/96	Wright Denny School Fifth Grade Teachers Jefferson County	Too much for one year. Not age appropriate.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Six - Social Studies				
10/23/96	Allyson Schoenlein Cabell County Schools	1) Do the instructional materials (texts) available currently cover the world regions listed here? 2) "Review for Assessment" most helpful!		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Eight - Social Studies				
10/17/96	Ritchie Co. High School	Needs much better sequence/chronology. World History ninth grade, U.S. to 1900 and 20th Century 11th.		
10/22/96	Terry White Ansted Middle School	You would do better to teach one half year of government civics instead of a fully year of WV since WV is also being offered in fourth grade. One year is too much when Civics is so important.		
10/23/96	Allyson Schoenlein Cabell County Schools	Such extensive emphasis on WV history, geography, etc., seems too narrow of a scope for a year of study --- at least as it is written. At least add a comparison/contrast objective(s) to other states and world regions.		
10/28/96	Robert T. Hall, Ph.D. Professor of Sociology WV State College	I propose that the following goals be included: 1) describe and analyze the major social institutions of West Virginia [Twentieth Century] society including the family, the educational system, the health care system, and the criminal justice system. 2) identify and explain the major social issues of West Virginia [Twentieth Century] society including social class and poverty, race and population trends.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 English Language Arts Grade Nine				
10/04/96	Karen Larry WVDE	The introductory information says, "English language art's electives with the exception of AP and college courses cannot be used as a substitute course for the required four units of English language arts." Because this is different from the current practice of many counties, this needs boldfaced to emphasize this new practice. In addition, a statement clearly saying that AP courses and college courses may be substituted for the required English courses should be added.	A	
10/23/96	Allyson Schoenlein Cabell County Schools	9.16 & 9.17 are ridiculous as written and will never be taught. Rewrite, with same content as 11.23 & 11.24. They are workable! 9.51 check spelling of penmanship. 9.85 "transform" spelling. 9.88 "memorization" - spelling.	A	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 English Language Arts Grade Ten				
10/23/96	Allyson Schoenlein Cabell County Schools	10.16 & 10.17 are also poor. Again, write like 11.23 & 11.24.	A	
10/24/96	Sharon Kontos Huntington, WV	In general, many of these objectives do not take into consideration the limitations of time to quantity of objectives to be met. 10.8 - Is not an appropriate lesson. 10.11 - A rewrite would help perhaps. 10.16 - This is an enormous time drain. 10.17 - We haven't the resources. 10.18 - We do not have the time. 10.22 - We do not have the resources. 10.51 - Inappropriate, they must be able to meet this objective by tenth grade. 10.52 - We assume that teachers can teach technology. 10.53 - No course work. Not teacher prep. 10.70 - Class sets are necessary and we do not have those materials. 10.73 - Assumes that materials are available in the classroom. 10.76 - We can facilitate but this is taught by librarians. 10.77 - Assumes that all students have had keyboarding and computer skills.	NA A A A A A NA A NA A NA NA NA NA NA NA NA	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 English Language Arts Grade Eleven				
10/23/96	Allyson Schoenlein Cabell County Schools	After 11.1.15, 11.3 is inserted again, before 11.1.16.	A	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 English Language Arts Grade Twelve				
10/23/96	Allyson Schoenlein Cabell County Schools	12.17 "Evaluate" misspelled.	A	

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Discrete Mathematics				
10/23/96	Mark Carl Fawcett Counselor Magnolia High School Wetzel County	Just exactly what does this course include. I am a certified math teacher and have never heard of this before.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Algebra Support				
10/25/96	Mark Carl Fawcett Counselor Magnolia High School Wetzel County	How is this different from Algebra preparation?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Review for Assessment (9-11)				
10/17/96	Ritchie Co. High School	Suggest alternate sequence - World History before U.S. Need more integration with history for understanding of interdisciplinary concepts. We like the present chronological order just fine. Like the options of requiring courses 10, 11, 12th grades.		
10/22/96	Terry White Ansted Middle School Fayette County	With 32 possible on a 4 by 4, why couldn't another social studies be required (increasing from three to four credits). Economics and definitely government would make logical choices.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Adolescent Social Studies				
10/24/96	Fred Harrington WVDE	Second paragraph, delete /or college and replace with - to be productive, contributing, lifelong citizens of their community.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 U.S. Studies 1900				
10/17/96	Ritchie Co. High School 107 School Road Ellensburg, WV 26346	9.49 Relevance of Russian rulers to the development of that century. You can't just jump into this without background.		
10/23/96	Allyson Schoenlein Cabell County Schools	Two changes must occur before this curriculum is in place and meeting current student needs. 1) The switching of course order will place a heavy burden on staffs. Phase in should be allowed. 2) Current textbooks will not be adequate to meet the change. After shifting course order, double loads of students will take certain courses. The numbers of available texts for students will be one half of what is temporarily needed, potentially costing huge investments for a short return.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 World Studies to 1900				
10/17/96	Mary C. Humphreys 218 Dwyer Lane Lewisburg, WV 24901	It makes little sense to break up U.S. Studies. If World Studies needs to be moved from the ninth grade, move it to the 11th grade. Students forget from one year to the next without an interruption in 10th grade for a World Studies class. I also do not see how a World Studies class that begins with early civilization can possibly make it to 1900 by the end of the year. That is totally unrealistic. If it takes two years to cover U.S. history, it would certainly take the same amount of time to cover World Studies.		
10/17/96	Ritchie Co. High School	10.9 - Brown vs. Board of Education - out of sequence.		
		10.12 - War powers of 1973? - These seem misplaced.		
10/28/96	William A. Toussaint WVDE	10.5 is legally erroneous. It would be correct if rewritten like so: "identify the powers <u>given by delegated</u> to the United States Constitution <u>to be</u> by the States and <u>national governments by the people of the United States</u> and <u>also</u> qualifications of State leaders.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Twentieth Century Studies				
10/28/96	Robert T. Hall, Ph.D. Professor of Sociology WV State College	I propose that the following goals be included in this section: 1) describe and analyze the major social institutions of West Virginia [Twentieth Century] society including the family, the educational system, the health care system, and the criminal justice system. 2) identify and explain the major social issues of West Virginia [Twentieth Century] society including social class and poverty, race and ethnicity, gender roles, and population trends.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Science - Grade Nine				
10/17/96	Laura Kerns Science Teacher Summersville Jr. High	I am concerned with the objectives numbers 9.41, 9.43, 9.46 and 9.47. All of these objectives deal basically with writing and balancing chemical equations. I feel these are unfair to students who do not yet have the mathematical tools to be able to do the work. Those who have completed Algebra I and are taking Algebra II have no trouble, on the other hand, those who are in general math have great difficulty. Many of my students cannot multiply the number they missed by two and subtract the answer from 100 to get their percentage. Yet I am expected to teach them how to balance a chemical equation. Would it not be better to move these objectives to an academic year in which all of the students will have at least completed Algebra I or be choosing Chemistry as an elective?	NA	These objectives are either assessed on Stanford 9 or provide the introduction to the concepts that will be assessed at other grade levels. Equations are introduced as early as grade 6. Writing and balancing equations are for simple reactions for grade 9 - not complex reactions.

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Science - Grade Nine (continued)				
10/17/96	Laura Kerns Science Teacher Summersville Jr. High	Another concern is the amount of material we are expected to cover. At present the ninth grade science content covers approximately 31 objectives, Policy 2520 proposes 71 objectives, doubling the amount we now cover. Another fact was the way in which selected state objectives have been boldfaced, as they are the ones which will be stressed on the Stanford test.	NA	Reformatting the present ninth grade curriculum delineated the broad statements on the concepts to be addressed. The delineation, while increasing the number of objectives, provides better direction for teachers. The specificity allows for clarification as to the depth of coverage of a concept at a specific grade level. Of the 31 objectives not bolded, 10 provide the foundation for assessment at later grade levels. The remaining objectives support the understanding of the assessed objectives and are necessary for the K-10 spiral curriculum.

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Chemistry - Conceptual/Technical				
10/25/96	Mark Carl Fawcett Counselor Magnolia High School Wetzel County	We don't have enough science teachers for regular - how do we teach this and how is it different?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Environmental Earth Science Eleven/Twelve				
10/17/96	Laura Kerns Science Teacher Summersville Jr. HS	The other sets of objectives that concern me are ES.25, ES.26, ES.27, ES.28, ES.29, ES.30, ES.31 dealing with Astronomy. Would it not be better to leave most of these objectives to be taught in the ninth grade year? I feel that the students can better handle the Astronomy objectives without a lot of math background as opposed to balancing equations without Algebra I.	N/A	All students receive instruction in the basic concepts. These objectives are introduced at other grade levels such as 7.57, 7.58, 7.59, 7.63, 8.60, 8.61, 8.67, 8.68, 8.71, 9.75, 9.78, 9.85, 9.91, 10.72, 10.77. These objectives ES.25 - ES.31 are revisited for in-depth, advanced study in Environmental Earth Science eleven/twelve.

INSTRUCTIONAL GOALS AND OBJECTIVES

POLICY 2520

COMMENT LOG

November 1, 1996 - November 12, 1996

December State Board Meeting
Part I

ACTION **TYPE**

N = No Response - = Negative
 NA = Not Accepted + = Positive
 A = Accepted 0 = Neutral

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General.				
11/01/96	Karen Robertson-Thorn South Middle School Monongalia County	Perhaps, this is the inappropriate place for this comment, however, it relates to the fiscal impact of Policy 2520. What about the money that was spent on reading materials in 1995 (at our school along \$13,307.40 x 3 not counting additional novels and magazines) do those materials now go to the language arts teacher who barely has time to utilize all their materials? When will instructional goals and objectives as well as certification requirements be available for career exploration, development guidance and remedial reading? Are there no instructional goals for remedial or at-risk students?		
11/06/96	Boone County Kindergarten Academy Faculty Senate Uneceda, WV 25205	Committee members did an excellent job on instructional goals and objectives! Textbooks should be adopted to correlate with these goals and objectives. The textbooks we have now, do not.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General (continued)				
11/08/96	Suncrest Primary Morgantown, WV Monongalia County	Written in a language that makes them difficult to interpret. All early childhood children should have social studies and science and the fine arts. Time should have been provided so we could have looked at all early childhood or at least one level above/below in an in-depth way. Also, there could have been a county committee of teachers, administrators to review these goals.		
11/08/96	Jim Williams E. Greenbrier Jr. High Greenbrier County	My concern is for the lack of any geography course being taught as either required or elective at the high school level.		
11/08/96	Peterstown Middle Team Six Peterstown, WV Monroe County	As Team Six we are concerned with the volume of material in the objectives. We feel it is not humanly possible to address all these objectives in the course of a school year. We also feel pressure to teach to the test, which we are opposed to.		
11/12/96	Kathy Reifstech Frank Pugh Mollie Boso Camia Pugh Amy Murray Parkersburg, WV 26101 Wood County	Page 11 Program Charts, Early Childhood K-2 - many of the objectives are suitable for five year olds. Ensuring mastery of these objectives is an unattainable goal for the majority of kindergarten children.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General (continued)				
11/12/96	Harpers Ferry Jr. High Faculty Senate Todd Chicchirichi Jefferson County	We think the proposed policies and regulations in SB 300 are rigorous and unreasonable. There are too many expectations and standards required to be implemented in an unrealistic amount of time. Teacher input and recommendations must be considered before changing educational objectives. We feel SB 300 should not be approved because more time is required for discussion and implementation.		
11/12/96	Debra Moore 6202 MacCorkle Ave St. Albans, WV 25177	I am concerned about the lack of emphasis being placed on art education. I am concerned about the possible loss of a comprehensive music program as well as the de-emphasization of art and music in grades K-2.		
11/12/96	Sandra Foster 176 Riverbend Blvd. St. Albans, WV 25177	Test makers have determined what we teach - this is not right!		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-2. Purpose and Format.				
11/06/96	David Graham Wahama High School Mason County	It appears that West Virginia is attempting to fit its social studies curriculum to the SAT Test. This is equivalent to the "tail wagging the dog."		
11/08/96	Cabell County Schools Social Studies Dept.	If you read the policy this is not true. The policy defines nothing.		
11/12/96	Kathy Reifstech Frank Pugh Mollie Boso Camiaua Pugh Amy Murray Wood County	Early childhood research shows that young children need time and concrete experiences to progress through the natural stages of development. Many of the kindergarten goals/objectives are more appropriate in first grade. By making them part of the kindergarten curriculum you are creating situations where more children will be at risk for failure.		
11/12/96	Debra Moore 6202 MacCorle Ave St. Albans, WV 25177	Are our instructional objectives in line with the newly adopted testing program or are we providing a testing program to access what students are learning?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-3. Incorporation by Reference.				
		INSTRUCTIONAL GOALS English Language Arts		
11/01/96	W. T. Brotherton, Jr. Spilman, Thomas & Battle Law Offices Charleston, WV 25321	I am suggesting the following addition to the referenced item: "The social studies curriculum prepares students for gainful employment, post secondary education and/or college and <u>to be lifelong good citizens of the community.</u> "		
11/01/96	Mary M. Tucker Taylor County Tech. Ctr. Grafton, WV 26354	The objective should be expanded to read, "The social studies curriculum prepares students for gainful employment, post secondary education and/or college, <u>and to be lifelong good citizens of the community.</u> "		
11/06/96	Dr. Joe Manzo Concord College Athens, WV 24712	I think the emphasis on speaking skills is most appropriate.		
11/08/96	Paula Keplinger H.C. 69 Box 9B Alma, WV 26320	The instructional goals and objectives provide a focus for teachers to teach and students to learn those skills and competencies essential for future success in the workplace or in future education, and to be good citizens in their communities."		
11/12/96	Jr. High L.S.I.C. 2730 Forrester Ave. St. Albans, WV 25177	Good, but has no reference to literature.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS				
English Language Arts (continued)				
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	"Viewing" should be considered as a component of the K-12 instructional goals, especially in light of the core electives. The K-12 scope and sequence of skills development is developmentally inappropriate. The integration strategy of instruction appears to be lacking in all areas of curricula, i.e., vocabulary development is a necessary skill of all content areas. "Research" should be considered as a component of the K-12 instructional goals. All of the components should be developed in a sequential manner.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Mathematics				
11/06/96	Dr. Joe Manzo Concord College Athens, WV 24712	It's good to begin math early in the curriculum.		
11/12/96	Debra Moore 6206 MacCorkle Ave St. Albans, WV 25177	I'm not sure that all students have the ability to successfully complete higher level mathematic classes that are being mandated.		
11/12/96	Paula Taylor 400 Third Ave So. Charleston, WV 25303	Not every student can or needs to be enrolled in an algebra course. The push for this will be defeating to low-level students. We have students at junior high that do not know times tables, how to round, etc. Still, on the concrete level of operational stages, impossible to get to higher levels needed for algebra.		
11/12/96	Lynda Birch 202 Village Ct. Scott Depot, WV 25560	All students are not able to take algebra and courses above algebra.		
11/12/96	Jr. High LSIC 2730 Forrester Ave. St. Albans, WV 25177	I would like to see more emphasis on the connection between math problems and using math in the real world. Graphing skills should be mentioned.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	A statement should be included to emphasize the use of correct vocabulary beginning at the kindergarten level. Why are workplace skills not identified in math K-8?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Social Studies				
11/01/96	Constance Pirner Fairmont, WV 26554 Concord College	I believe that an elective geography course at the high school level is needed.		
11/06/96	Dr. Joe Manzo Concord College Athens, WV 24712	Well done!		
11/06/96	Ann Bennett H.C. 88 Box 6 Seneca Rocks, WV 26884	Geography as an elective at the high school level is essential if West Virginia wants its students to be internationally competitive in order to meet the demands of a new age and different world. Geography is essential to our students in order for them to leave school equipped to function economically and be a responsible citizen. Through geography they are better able to apply spatial and ecological perspectives to life situations.		
11/12/96	Marcella Adkins Independence High Raleigh County	I feel geography should be taught in high school so young adults will comprehend how other nations affect our economy and lives.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
Social Studies (continued)				
11/07/96	Regina Scotchie Miller Jr. High Marion County	Geography on the high school level can be analyzed and interpreted and finally evaluated on a much higher level. West Virginia's economy is strongly linked interemotionally and students <u>must</u> be aware of this. Evidence of a global economy and the easy migration of people make it clear that knowledge and understanding of diverse cultures and their locations in various regions is imperative. Geography as an elective in high school would satisfy this need.		
11/08/96	Thomas Roberts Jaeger High School McDowell County	An elective geography course should be offered at the high school level. I would recommend a geography-historical course linking geography and history.		
11/08/96	Paula Keplinger HC 69 Box 9B Alma, WV 26320	This section might be altered to say, respectively: "The social studies curriculum prepares students for gainful employment and/or post secondary education, and to be good citizens."		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
Social Studies (continued)				
11/08/96	Cabell County Schools Middle School	No problems with the proposed program of study - but current textbook is very weak at seventh grade level. Lack of computer/programs availability for in-class room usage, i.e., IBM/Internet needs to be addressed.		
11/08/96	Paula F. Humen 14 Mill Hill Drive White Sulphur Sps. WV 24986	I would like to see an elective geography course added to the high school curriculum. I feel that this is an area in which our students are weak.		
11/08/96	Barbara Criss 42 Beechwood Drive Elkins, WV 26241	I feel there should be an elective course of geography in the high school. Each year as the population goes up the need for geography is more important.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
Social Studies (continued)				
11/12/96	Jr. High L.S.I.C. 2730 Forrester Ave. St. Albans, WV 25177	Emphasis on citizenship is good and should be ongoing. The goals listed under economics are taught in Family & Consumer Science in seventh, eighth, and ninth grade and in adult roles and functions in the 11th grade and yet, you all are trying to eliminate all of those classes! Problemsolving is throughout all F.A.C.S. courses. More emphasis needed on current events. Community service is good but should be infused in the social studies classes.		
11/12/96	Larry Myers Hampshire County Schs. Romney, WV 26726	1) Are textual materials available for this next adoption that would cover these goals & objectives? 2) Testing social studies - especially ninth grade - would be unfair since coverage does not align. All testing in these conditions should be waived until curriculum is aligned. For ninth, that would be 1999. 3) Does absence of testing objectives in K-2 indicate lack of importance?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Science				
11/06/96	Dr. Joe Manzo Concord College Athens, WV 24712	This is a broad curriculum, as it should be.		
11/7/96	Sherman Elementary Boone County	The idea of 50 percent hands-on is great. But it would require extra planning and a greater expense of money.		
11/08/96	Suncrest Primary Morgantown, WV Monongalia County	Why only in science, strategy is dictated? Fifty percent of time on hands-on learning.		
11/12/96	Linda Wimer Hurricane Middle Putnam County	Instructional goals are adequate and age-appropriate at each of the middle school grade levels. They also correlate well with the practice SAT.		
11/12/96	Jr. High L.S.I.C. 2730 Forrester Ave. St. Albans, W 25177	I would like to see the connection between science and technology spelled out more. 15-25% of their class time in secondary schools should be research and experimentations in science on the computer.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	The idea of developing a curriculum tool from a standardized test makes no educational sense. A viable curriculum should be developed first and the test second.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Process/Workplace Goals				
11/06/96	Dr. Joe Manzo Concord College Athens, WV 24712	The philosophy behind this section is very good.		
11/12/96	Debra Moore 6206 MacCorkle Ave St. Albans, WV 25177	With the amount of stress teachers experience during the course of the school day, I believe it is unthinkable to extend the school day or delete eight as the maximum number of hours.		
11/12/96	Jr. High L.S.I.C. 2730 Forrestal Ave. St. Albans, WV 25177	Many of the self management goals expressed here are effectively taught in Family & Consumer classes throughout the secondary schools at the present time. Perhaps instead of eliminating the very important and timely classes, we should make them required of all! The workplace experience has long been effectively used in vocational secondary and post-secondary classes. Leadership skills, communication and jobs/work skills are very important but again they are taught in FACS courses. Perhaps they should be supported and even given honors status so advanced students will take the classes.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	These goals are supported, however, it is of optimum importance that individual student needs be constantly and consistently be addressed.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood K-2				
11/07/96	Sherman Elementary Boone County	The depth of reteaching needs to be clarified for all grade levels. Which teacher will be responsible for moving students to the next objectives after mastery?		
11/08/96	Jane Chandler 2810 Liberty St. Parkersburg, WV 26104	Many of the objectives are unsuitable for five year olds. Ensuring mastery of those objectives is unattainable and unrealistic for five year olds. There were no current early childhood educators on the committee. Many of the kindergarten goals and objectives are more appropriate for first grade. By making these part of the Kindergarten curriculum you are creating situations where more children will be at-risk for failure.		
11/06/96	Karen Alexander Ellen Cheek Cheryl Howerton Wayne County	These required programs of study should be taught at each grade level as in individual programs but need not be taught daily.		
11/08/96	Suncrest Primary Morgantown, WV Monongalia County	Not realistic to reteach daily - disagree that students should not have science, art, music, etc. for core instruction - some students excel in these areas, it is important for all to have exposure - to address the "whole child."		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood K-2 (continued)				
11/12/96	Debra Moore 6206 MacCorkle Ave St. Albans, WV 25177	I am concerned about the de-emphasizing of traditional subjects, such as science and social studies in grades K-2. I'm afraid they won't develop the early skills they need to build on later.		
11/12/96	Tomahawk Elem. FS Hedgesville, WV 25427 Berkeley County	This portion of the document is excellent. We are concerned with the number of objectives in the areas of science and social studies that are required to be covered. Objectives for science and social studies must be reduced to ensure that we can utilize the benefit of reteaching the skills of language arts and math. The major purpose of this level needs to remain language arts and math. It is imperative that students become good readers and problem solvers.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	The second sentence about required programs of study should be deleted. Other alternative such as extended day programs should be offered.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood 3-4				
11/06/96	Sherman Elementary Boone County	It sounds like the students that haven't mastered the core areas are going to be punished by losing their music, art, and physical education.		
11/08/96	Karen Alexander Ellen Cheek Cheryl Howerton Wayne County	These required programs of study should be taught at each grade level as individual programs but need not be taught daily.		
11/08/96	Suncrest Primary Morgantown, WV Monongalia County	Not realistic to reteach daily - disagree that students should not have science, art, music, etc. for core instruction - some students excel in these areas, it is important for all to have exposure - to address the "whole child."		
11/12/96	Toni Lynne DeVore Wood County Schools Parkersburg, WV 26101	In the new policy, science is required daily. Rather than have a cursory 10 minutes daily, the weekly requirement allows teachers to do an extended hands on activity for an afternoon. Rather than tie teachers to the daily requirement give them the flexibility to do the science in the best set up for their students.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood 3-4 (continued)				
11/12/96	Debra Moore 6206 MacCorkle Ave St. Albans, WV 25177	I am distressed at the possibility that subjects such as art, music, physical education and health in grades K-4 will not be focused on. I don't think students will reach their full potential without this early exploration.		
11/12/96	Tomahawk Elem. FS Hedgesville, WV 25427 Berkeley County	Social studies and science should not be taught on a daily basis. By teaching them on the same day, students receive quick mini lessons instead of an in-depth study of the subject. We recommend that the provision be changed to allow for teaching science and social studies on a rotating basis, with equal time given to each. We feel it necessary to leave the emphasis in K-2 on language arts and math and read just the science and social studies curriculum.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	The second sentence about required programs of study should be deleted. Other alternatives such as extended day programs should be offered. The foreign language component should be an offering of two kinds. Foreign language exploration and leveled-sequential credit courses.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Middle Childhood 5-8				
11/06/96	Karen Robertson-Thorn South Middle School Monongalia County	Where is remedial reading? Is career exploration a semester of full-year course?		
11/06/96	Sherman Elementary Boone County	Clarify all reteaching in all grade levels.		
11/12/96	Sue Goodwin 1226 Stuart Street Charleston, WV 25302	Technology education needs to remain under required to be offered. Students need exposure to these skills - not all students will go to college.		
11/12/96	Nancy White 1117 Ivywood Lane So. Charleston, WV 25303	As a foreign language teacher, I am in favor of having foreign language available to all seventh and eighth graders. However, due to individual student abilities, different course objectives will need to be developed to encompass the wide range of student achievement levels that can be obtained.		
11/12/96	Jr. High L.S.I.C. 2730 Forrester Ave. St. Albans, WV 25177	I suggest health be rotated with computers, careers, family and consumer science and developmental guidance. Basic computers must be mastered in the middle years.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Adolescent 9-12				
11/08/96	Karen Alexander Ellen Cheek Cheryl Howerton Wayne County	It's good to see one course in the arts required for graduation. Thank you!		
11/12/96	Toni Lynn DeVore Wood County Schools Parkersburg, WV 26101	In requiring three units of science and math, more teachers, lab rooms, equipment and furniture will be needed. Currently 70% of our students are taking science and math. By requiring the additional class, concern for those students wanting a fourth year of science and math have been registered.		
11/12/96	Jr. High L.S.I.C. 2730 Forrestal Ave. St. Albans, WV 25177	If a foreign language requirement is made in grades 9-12, it certainly is not needed in the middle years in lieu of other courses! Same for health requirement.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Core Electives 9-12				
11/06/96	Dr. Joe Manzo Concord College Athens, WV 24712	I believe there is a need for an elective geography course at the high school level.		
11/06/96	David Graham Wahama High School Mason County	The development of career cluster curriculums as part of the "West Virginia School to Work" program will require the offering of specialized social science classes. These will include, but not be limited to: Economics - full term for business majors; psychology and law and legal for health, human services, etc.; and Sociology for those in fine arts and humanities. These need to be addressed somewhere in this document.		
11/08/96	Sissonville High School Elizabeth Riggall Faculty Senate Pres. Jackson County	Driver's Education (State Policy 18.6.3) needs to be added to this list. At this time it is a state requirement and is imperative to keep. This is a true "Life Skill" for School to Work.		
11/12/96	Debra Moore 6206 MacCorkle Ave St. Albans, WV 25177	I am concerned that elective offerings are being illuminated that build basic life skills.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Core Electives 9-12 (continued)				
11/12/96	Jr. High L.S.I.C. 2730 Forrester Ave. St. Albans, WV 25177	What about Food Science as an elective? It is a bio-chem class and a good into class for chemistry. What about another core called Applied Arts and in it offer: family and consumer science classes like adult roles, parenting, child care, community service class, technology ed., computers, life skills (STEPS).		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	There should be no requirement to take the AP exam. If required, the local board of education should fund if the state agency will not fund the cost.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Non-Core Electives 9-12				
11/08/96	Dr. Jeanne Moore WVDE Athens, WV 24712	One course in the arts is "required for high school graduation" not merely required to be offered as the chart states. Courses in all four arts programs of study are required to be offered.		
11/12/96	Sue Goodwin 1226 Stuart Street Charleston, WV 25302	Every high school needs to offer technology education/industrial arts so that students can develop their individual talents.		
11/12/96	Debra Moore 6206 MacCorkle Ave St. Albans, WV 25177	Where are additional teachers coming from to teach foreign language classes in grades seven and eight without causing teacher cuts? If there isn't additional funding to add teachers this means existing courses and teachers have to go.		
11/12/96	Paula Taylor 400 Third Ave So. Charleston, WV 25303	Are extremely important - students need to develop life skills (home economics, shop, etc.).		
11/12/96	Lynda Birch 202 Village Ct. Scott Depot, WV 25560	All students need to have physical education for their "extremely" poor physical health. Home economics and technology education are also important of real-life skills.		
11/12/96	Dan Coleman 1834 Mountain Dr. So. Charleston, WV 25303	Some students need more time for non-core electives. They not only involve life skills but also are suited to many students' talents and interests.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Non-Core Electives 9-12 (continued)				
11/12/96	Nancy White 1117 Ivywood Lane So. Charleston, WV 25303	Students need exposure to home economics, shop, physical education, and music at this level to enhance life skills. The arts need to be enhanced, not made less readily available.		
11/12/96	Barbara Ball 1012 Kilgore Culloden, WV 25510	Students need opportunities to learn life skills, but community service requirements cannot be allowed to cut too much into classroom time.		
11/12/96	Jr. High L.S.I.C. 2730 Forrestal Ave. St. Albans, WV 25177	I can't believe you plan to offer dance and theater but not anything in the family and consumer sciences or the technologies. How can students study health and wellness without learning nutrition? How can they function in the workplace if they can't manage their own lives and the adult roles they will try to live?		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Local school board should approve electives, not the state board of education.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS INSTRUCTIONAL PRACTICES				
11/12/96	Debra Moore 6206 MacCorkle Ave St. Albans, WV 25177	I believe too much time will be wasted in the classroom if teach/reteach methods of instruction become a daily requirement. Teaching technique should be left up to the classroom teacher. I also believe this repetition will cause advanced students to loose interest who need to be challenged with new and different subjects. Time also needs to be built into school day for new committees to develop plans for such things as technology or school improvements.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Where are the mathematics instructional practices? The general goals emphasized by the NCTM Standards need to be reiterated at least in some form in the document.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS DOCUMENT GUIDE				
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Proofread subscripts and use heavier boldface font. Color code different content areas. Place a line in front of each goal and objective to document date of delivery.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - English Language Arts				
11/07/96	Milton Elementary Kindergarten Dept. Cabell County	K.52 - not developmentally appropriate K.54 - K.64 - software unavailable K.53 and K.54 - need to be eliminated		
11/08/96	Jane Chandler 3810 Liberty St. Parkersburg, WV 26104	The following objectives do not allow for the natural stages of growth and development of young children: K.24; K.25; K.26; K.41; K.49; K.52; K.53; K.54; K.63; and K.64.		
11/08/96	Suncrest Primary School Morgantown, WV Monongalia County	These are not developmentally appropriate K.12, K.24, K.25, K.26, K.34, K.35, K.36, K.37, K.38, K.52, K.53, K.54, K.57, K.58, K.59, K.60, K.61, K.62, K.63, and K.67. K.14 change read to listen to and remove internationally....		
11/12/96	Kathy Reifstech 600 55th Street Vienna, WV 26105	The following instructional objectives do not allow for the natural stages of development: K12, K24, K25, K26, K41, K52, K54, K63, K64.		
11/12/96	Ranson Elementary Ranson, WV 25438 Jefferson County	This is taught daily. Blends and digraphs are not K-developmentally appropriate.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Delete K-24, K-25, and K-26 - not developmentally appropriate. Readiness should be put back in the kindergarten curriculum. Delete K-54, K-57, K-58, and K-59.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - Mathematics				
11/01/96	Fellowsville Elem. School Tunnelton, WV Preston County	1.1 Count forward to 999. How is this going to be evaluated? It would take forever for each child to do this. Not developmentally appropriate.		
11/07/96	Milton Elementary Kindergarten Dept. Cabell County	K.10 - change addition/subtraction of whole numbers with a total of twelve to total of ten. K.11 - use of addition and subtraction of whole numbers in one and two step problems too advanced and inappropriate. K.36 - use of calculators for these concepts inappropriate. And, calculators unavailable. Also, this too abstract.		
11/08/96	Jane Chandler 3810 Liberty St. Parkersburg, WV 26104	The following objectives do not allow for the natural stages of growth and development of young children: K.1; K.2 (too wordy and long); K.3; K.4; K.7; K.10; K.11; K.30; K.36.		
11/08/96	Suncrest Primary School Morgantown, WV Monongalia County	These are not developmentally appropriate: K.3, K.4, K.6, K.7, K.10, K.11, K.19, K.28, K.36. K.20 is unclear, K.29 with help; K.7 change 10th to 5th; K.2 leave out last two phrases.		
11/12/96	Kathy Reifstech Frank Pugh - Mollie Boso Camiaua Pugh Amy Murray Wood County	The following objectives are inappropriate for mastery: K1, K3, K7, K10, K11, K30, and K36.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Mathematics (continued)				
11/12/96	Ranson Elementary Ranson, WV 25438 Jefferson County	This is taught daily. Some requirements are too paper-pencil and not developmentally appropriate.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Do the kindergarten objectives reflect the Metropolitan Readiness Test? Are K.11 and K.19 developmentally appropriate for a kindergarten student? (Piaget's Theory of Conservation indicates these occur about age 8).		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - Social Studies				
11/06/96	Marcella Adkins Independence HS Raleigh County	To influence and make students knowledgeable for future use.		
11/07/96	Milton Elementary Kindergarten Dept. Cabell County	K.23 - no software available.		
11/07/96	Regina Scotchie Miller Jr. High Marion County	Geography on the high school level can be analyzed and interpreted and finally evaluated on a much higher level. West Virginia's economy is strongly linked internationally and students must be aware of this. Evidence of a global economy and the easy migration of people make it clear that knowledge and understanding of diverse cultures and their locations in various regions is imperative. Geography as an elective in high school would satisfy this need.		
11/08/96	Jane Chandler 3810 Liberty St. Parkersburg, WV 26104	The following objectives do not allow for the natural stages of growth and development of young children: K.12; K.15; and K.23.		
11/08/96	Suncrest Primary School Morgantown, WV Monongalia County	These are not developmentally appropriate: K.6, K.11, K.12, K.26, K.22 with help, K.23 we have none.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - Social Studies (continued)				
11/12/96	Larry Myers Hampshire County Schs. Romney, WV 26726	There is no bold nor script on some key objectives (even for upper grades). Technology area = little or old equipment to fulfill objectives. Says "no cost" which is incorrect. Discrepancy between large and small counties also exists.		
11/12/96	Kathy Reifstech Frank Pugh Mollie Boso Camia Pugh Amy Murray Wood County	The following objectives are inappropriate: K12, K15, and K23.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	No bold nor subscript (even for upper grades on key objectives.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - Science				
11/07/96	Milton Elementary Kindergarten Dept. Cabell County	K.69 - no software		
11/08/96	Jane Chandler 3810 Liberty St. Parkersburg, WV 26104	The following objectives do not allow for the natural stages of growth and development of young children: K.10; K.27; K.56; K.66; and K.69		
11/08/96	Suncrest Primary Morgantown, WV Monongalia County	These are not developmentally appropriate: K.2, K.5, K.43, K.55, K.57, K.59, K.61, K.72, K.23 and K.28 are teacher goals, K.69 we have none.		
11/12/96	Kathy Reifstech Frank Pugh Mollie Boso Camiaua Pugh Amy Murray Wood County	The following objectives are inappropriate: K24, K27, and K66.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Science K-4 - 1) is hard to follow 2) too many objectives 3) boldfaced areas 4) objectives need to be categorized according major concepts 5) themes of changes, systems, and models should be grouped to make document "user friendly"		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - English Language Arts				
11/06/96	JoAnne Cyrus Milton Elementary Cabell County	The following objectives are not developmentally appropriate for first grade students. 1.21 science fiction tall tales, 1.35 prefixes, 1.42 textual writing, 1.69 (5 steps to writing), 1.83 spell irregular verbs, 1.107 card catalog, 1.109 use guide words in a dictionary computer, 1.120 select appropriate software.		
11/12/96	Ranson Elementary Ranson, WV 25438 Jefferson County	Too difficult a skill. It is above grade level. More emphasis needs to be given to reading vocabulary.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Rethink testing medial sounds (1.23). Rethink testing 1.27, 1.28 at another level, also 1.101. Please check subscripts for 1.102 - objective 1.109 is unrealistic for first grade.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - Mathematics				
11/07/96	JoAnne Cyrus Milton Elementary Cabell County	The second grade curriculum has been moved down to first grade. Inappropriate objectives - 1.1 count to 999, 1.4 written no. To 200, 1.6 ordinal no. 11th & 12th, 1.9 count and trade money to 100 cents, 1.13 missing elements, 1.153 digits add and subtract, 1.28 construct three dimensional figures, 1.42 select appropriate units.		
11/12/96	Ranson Elementary Ranson, WV 25438 Jefferson County	Too difficult of a skill.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Objectives appear to be age-level appropriate. Teachers should use correct vocabulary when teaching concepts.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - Social Studies				
11/06/96	JoAnne Cyrus Milton Elementary Cabell County	1.1 name mayor of town, 1.17 on map locate major rivers, lakes, mountains and oceans. Not developmentally appropriate.		
11/12/96	Larry Myers Hampshire County Schs. Romney, WV 26726	Some objectives are too ambitious, e.g, 1.20 - same technology comments as K-6. No testing on social studies area in grade 1???		
11/12/96	Tomahawk Elem. FS Hedgesville, WV 25427 Berkeley County	An abundance of objectives for first grade science and social studies exist in the draft objectives. The science and social studies objectives need to be reduced and realigned to allow first grade teachers to ensure mastery in language arts and mathematics without students falling behind because of lack of exposure to the stated minimum requirements.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Some very ambitious objectives, e.g., 1.20. Same technology comments as K-6. No testing on social studies items grades 1???		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - Science				
11/06/96	JoAnne Cyrus Milton Elementary Cabell County	1.11 - be in awe and wonder. Not developmentally appropriate.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Second Grade - English Language Arts				
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Objectives 2.9, 2.23 are difficult. The schwa sound should be omitted in 2.27 for testing purposes. 2.5 is an inappropriate test item. 2.54, 2.56 - are inappropriate for testing. 2.73 and 2.74 could be placed in the third grade. 2.96 could be tested in the third year instead of grade two.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - K-8 Second Grade - Mathematics				
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Why just teach numbers to 1,000? (First grade 999 and third grade 100,000). Teachers need to use correct cocabulary when teaching each new concept).		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Second Grade - Social Studies				
11/08/96	Suncrest Primary Morgantown, WV Monongalia County	Conflict resolution - materials problem exists. What materials and teacher training will be available and will there be a cost for this? Ambitious objective 2.11 - to expect second to explain role of banks. Technology objectives are again too ambitious given state of equt. And training. There are no bold items - no social studies test items K-2.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Materials problem. What textual, etc. are/will be available? 2.11 ambitious to expect second to explain role of banks. Technology objectives are too ambitious.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Second Grade - Science				
11/08/96	Suncrest Primary Morgantown, WV Monongalia County	Not tested? Why not? This is much too ambitious for second graders!		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Third Grade - English Language Arts				
11/08/96	Suncrest Primary Morgantown Monongalia County	English - OK, Reading - OK, Writing should be in other grade levels. 3.42 hard concept, Spelling goes with spelling book, Language - OK, needs to continue through upper grades, Computer - do not have software.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Third Grade - Mathematics				
11/08/96	Suncrest Primary Morgantown, WV Monongalia County	Fractions and especially decimals are difficult for third grade. #3.29 read and use bar graph is more appropriate. #3.44 too much. Not developmentally appropriate. #3.12 should be in fourth, also #3.40 and 41. Need more problem solving.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	In 3.33, it should read translation, reflection, and rotation (slide, flip, and turn).		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Third Grade - Social Studies				
11/08/96	Suncrest Primary Morgantown, WV Monongalia County	3.1 and 3.2 too many facts and information for third grade. 3.12-3.17 entirely too much. Most civics and economics not age appropriate. #3.35 should be fourth or fifth grade. #3.36 exclude longitude, latitude, time zones. Computer and technology require expensive resources. Do not have software. Not developmentally appropriate.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Objectives are too ambitious for third grade, e.g., civics 3.2, 3.12, 3.16 - economics 3.18-3.24 - geography 3.35. Surely this has been misstated. History objectives have developmental tasks.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Three - Science				
11/08/96	Suncrest Primary Morgantown, WV Monongalia County	#3.11 Can't teach or measure. Science is too much to expect of teachers and students at this level.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Four - Mathematics				
11/06/96	Dr. Joe Manzo Concord College Athens, WV 24712	This is a broad curriculum, as it should be.		
11/12/96	Dr. Charles Duffey RESA VIII Martinsburg, WV 25401	Objectives appear to be age level appropriate.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Four - Social Studies				
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	WV content shows no test items - is this the determining factor on how WV gets covered? It should not be. Elementary teachers cannot cover everything. Almost all four social studies tested - so seems overloaded (and there's NAEP, writing assessment and SAT too). Too much. 4.16 - not clear. 4.27 - tax structures differ in different states. 4.29 - too ambitious/general - is it valid? 4.37 - All? Presidents! Needs to be reworded. Big question on WV studies - is it, or isn't it materials question? History WV15 - too broad/vague/etc. With a test-dominated curriculum, there is a danger of no WV coverage - not enough time.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Five - Mathematics				
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Objectives appear to be age level appropriate.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Five - Social Studies				
11/12/96	Ranson Elementary Ranson, WV 25438 Jefferson County	Many objectives are not in our textbook.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Five - Science				
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Objectives listed under science themes and subject matter are a hodge podge of isolated and disjointed facts. The numbers make it appear impossible for a classroom teacher to pull them together into cohesive themes and units. The fact that the objectives taken straight from the Stanford test are in boldface type sends the message to teachers that these are the only viable objectives. Many of the objectives in regular type are more important. The of the objectives are ambiguous and subject to interpretation. Succession is not in any objective in grades 5 through 9. How can it be reviewed in 10th if it has never been taught? Objectives need to be grouped into common themes or concepts such as weather, genetics and environmental concerns to make them easier to accomplish.		
11/12/96	Ranson Elementary Ranson, WV 25438 Jefferson County	Our units do not cover objectives on plants, except for structure.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Six - Social Studies				
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Regions objectives not related to regions and stated description of content coverage. Civics objective 6.7 is unclear. History objectives - regions!!! NOT! These are grade five content questions.		
11/12/96	Ranson Elementary Ranson, WV 25438 Jefferson County	Civics and history objectives are not related to subject text at this grade level. 6.34, 6.38, 6.40 are taught at a previous grade level and should be tested at that level.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Six - Science				
11/12/96	Linda Wimer Hurricane Middle Sch. Putnam County	There is some confusion in hunting for topics that we should be covering - topics from various content areas are not grouped (example: chemistry topics are scattered throughout the document). Students would benefit more if topics were taught as wholes. We would like to have a listing of topics by grade levels such as the SAT series objective statements from Student Services and Assessments, WVDE.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Seven - English Language Arts				
11/06/96	Karen Robertson-Thorn South Middle School Monongalia County RESA VIII Martinsburg, WV 25401	With the incorporation of reading into the language arts, these teachers have from 162-173 instructional objectives to meet or address with students. This is almost 50% more than any other core subject. Also, where would you find the time to include projects, presentations and most importantly the reteach component?		
11/06/96	JoAnn Cyrus Milton Elementary Cabell County	1.11 - be in awe and wonder.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Review cited example to determine accuracy (i.e., 7.99 and 7.127). A sequential research strand should be introduced in this grade and developed through 12th grade.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Seven - Mathematics				
11/12/96	Sandra Foster 176 Riverband Blvd. St. Albans, WV 25177	Needs to be ability level classes instead of everyone taking algebra.		
11/12/96	Paula Taylor 400 Third Ave So. Charleston, WV 25303	Ability level classes in mathematics - the low level Chigh level students will suffer. Not every student should be expected to take algebra.		
11/12/96	Lynda Birch 202 Village Ct. Scott Depot, WV 25560	Needs to be ability level math classes.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Materials need to be upgraded to support these new objectives. Teachers will need training (specific) to implement these objectives and they should be certified in mathematics 7-12.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Seven - Social Studies				
11/06/96	David Graham Wahama High School Mason County	I am very pleased to see geography being emphasized at this level. This should provide a firm foundation for later studies.		
11/12/96	Debra Moore 6206 MacCorkle Ave St. Albans, WV 25177	My concern is where is the equipment going to come from for students to word process reports? Where are the video cameras going to come from to film student presentations?		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Review for assessment 7.55 - parole systems! This is completely unrelated to geography but very clearly included due to "testing concerns! Let's call it "current events."		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Seven - Science				
11/12/96	Judith O'Neal 518 Midland Trail Hurricane, WV 25526	There is some confusion in hunting for topics that we should be covering - topics from various content areas are not grouped (example: chemistry topics are scattered throughout the document). Students would benefit more if topics were taught as wholes. We would like to have a listing of topics by grade levels such as the SAT series objective statements from Student Services and Assessments, WVDE.		
11/06/96	Debra Moore 6206 MacCorkle Ave St. Albans, WV 25177	Is it realistic to expect students to read books outside class and give book reports in science. When will class size be mandated and enforced for manageable laboratory experiences to key place.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
		INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Eight - English Language Arts		
11/01/96	Karen Robertson-Thorn South Middle School Monongalia County	How is delivery, instruction and evaluation possible within a school year for this number of objectives? Since language arts teachers are permitted to teach reading, why can't reading teachers instruct in the language arts?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Eight - Mathematics				
11/12/96	Sandra Foster 176 Riverband Blvd. St. Albans, WV 25177	Ability level mathematics needs to be offered.		
11/12/96	Lynda Birch 202 Village Ct. Scott Depot, WV 25560	Ability level mathematics should be offered.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Materials need to be upgraded to support these new objectives. Teachers will need specific training to implement these objectives, and they should be certified in mathematics 7-12.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Eight - Social Studies				
11/06/96	David Graham Wahama High School Mason County	1) WV history should continue to be no more than a half term class. 2) A course on maps and globes reading charts and graphs, etc., as a follow-up to the seventh grade geography could be instituted for the other half. 3) There were no questions directly associated with WV history on the SAT practice test. Therefore, why give the subject more emphasis that it currently receives?		
11/12/96	Debra Moore 6206 MacCorkle Ave St. Albans, WV 25177	How will teaching WV Studies in eighth grade affect test scores? No national test is designed to be that specific. Actually I'm torn because I love WV Studies and would hate to see it removed but I don't want our students not to have the same advantage other students have who are taking the test.		
11/12/96	Sandra Foster 176 Riverband Blvd. St. Albans, WV 25177	Curriculum does not align itself with the county curriculum (students take WV Studies instead of American History).		
11/12/96	Lynda Birch 202 Village Ct. Scott Depot, WV 25560	The social studies program will not address testing. The legislature needs to address the program.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Eight - Social Studies (continued)				
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	Point should be made that concepts should be emphasized throughout study of WV. How can these WV be "bolded" and taught on national SAT test?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Eight - Science				
11/12/96	Melissa Thorner Hurricane Middle Putnam County	There is some confusion in hunting for topics that we should be covering - topics from various content areas are not grouped (example: chemistry topics are scattered throughout the document). Students would benefit more if topics were taught as wholes. We would like to have a listing of topics by grade levels such as the SAT series objective statements from Student Services and Assessments, WVDE.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Nine - English Language Arts				
11/08/96	Dr. Jeanne Moore WVDE	The objectives for all four levels 9-12 are exactly the same. This is disturbing since Policy 2510 provides that a child can "exam out" of courses for which he/she has completed the required instructional objectives.	A	
11/12/96	Debra Moore 6206 MacCorkle Ave St. Albans, WV 25177	Why aren't spelling skills emphasized more with the focus on this skill given on the testing program?		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	It is imperative that the state provide adequate technology to meet the rigorous computer curriculum as directed by the goals at this level. Research skills should be introduced at the kindergarten level and continued through grade 12. These skills should be delivered in a sequential and developmental manner.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Ten - English Language Arts				
11/06/96	Susan Stocks Jefferson High School Jefferson County	The staff does not have adequate training, money, or technology to implement the computer/technology objectives in any grade. In addition, there is too much material to cover in a year. For example, we do not at this time have the Internet or computers in the classroom.		
11/08/96	W. C. Seibert, Jr. Jefferson High School Jefferson County	Training for teachers in technology use and accessibility objectives are idealistic, too massive and too complex to achieve in a school year, the objectives are unrealistic for all students, and teacher autonomy is replaced by a regimen fit for military disciplines.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Eleven - English Language Arts				
11/26/96	Susan Stocks Jefferson High School Jefferson County	I don't think research is necessary in the eleventh and twelfth grades. Again, we do not have the equipment or the time or the experience.		
11/08/96	W. C. Seibert, Jr. Jefferson High School Jefferson County	Training technology is not provided for teachers. Accessibility to technology is not provided for all students. Some students are too slow, massive and complete to accomplish during the school year. Military disciplines replace creative instruction.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Twelve - English Language Arts				
11/06/96	Susan Stocks Jefferson High School Jefferson County	The program is too idealistic. Many of the objectives are too difficult for the general student.		
11/08/96	W. C. Seibert, Jr. Jefferson High School Jefferson County	Training and accessibility are not available for teachers and students. Objectives are idealistic, too massive and complex to achieve in one school year. Objectives are unrealistic for all students. Teacher creativity is replaced by regimental military disciplines.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Applied Math I				
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	In the introduction omit "and the demonstration of competency."		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Applied Math II				
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	In the introduction omit "and the determination of competency."		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES- GRADES 9-12 Mathematics - Algebra I				
11/12/96	Toni Lynne DeVore Wood County Schs. Parkersburg, WV 26101	Count the algebra/geometry prep as a math credit. A student taking this course in ninth grade could take algebra I in tenth and geometry in eleventh because this is not counted as a math credit another class would be necessary and would create an additional math class to be taken.		
11/12/96	Paula Taylor 400 Third Ave So. Charleston, WV 25303	Not every student should be expected to take algebra - if this goes through an exit test should be given to show if students have the algebra concepts, however, this test should be written for the basic concepts - not the most difficult.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Mathematics - Algebra II				
11/12/96	Toni Lynne DeVori Wood County Schs. Parkersburg, WV 26101	If algebra II/trigonometry is offered as a course, is it counted as two math credits?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Mathematics - Algebra/Geometry Preparation				
11/12/96	Toni Lynne DeVori Wood County Schs. Parkersburg, WV 26101	Please count as a credit in math.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 U.S. Studies 1900				
11/06/96	David Graham Wahama High School Mason County	Should be kept in the tenth grade. Could be changed to begin with the American Revolution and cover material to the Great Depression.		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	(Grade 9) testing on this content UNFAIR to students who are taking world history. Testing until re-adopted should be waived.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 World Studies to 1900				
11/06/96	David Graham Wahama High School Mason County	Should be kept in the ninth grade. Could cover to the French and Indian (seven years war).		
11/12/96	Dr. Charles Duffy RESA VIII Martinsburg, WV 25401	(Grade 10) Students will be leaving world history and taking a repeat of content coverage. Big Problem.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Twentieth Century Studies				
11/06/96	David Graham Wahama High School Mason County	Beginning with the Great Depression, this would allow students to spend more time dealing with issues of present concern. This would form a good foundation for specialized courses to follow.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Economics				
11/06/96	David Graham Wahama High School Mason County	Should be required as a half-term, basic course for seniors. We can't keep graduating young people who have little or no knowledge of how our economic system operates.		
11/06/96	Herchiel Sims, Jr. 426 Broad Street Charleston, WV 25333	I support the concept of adding economics to the social studies curriculum.		
11/06/96	Ken Waldeck Kelley's Men Shop Charleston, WV 25302	I ask that you require an economics course in the new social studies curriculum.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
		INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Civics/Government		
11/06/96	David Graham Wahama High School Mason County	This also should be required as a half term basic course for seniors. Most of these students are eligible to vote in primaries and knowledge of how the political system generates is a must.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
	INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Science - Grade Nine			
11/12/96	Toni Lynne DeVori Wood County Schs. Parkersburg, WV 26101	There are too many objectives to be met and they were written because of the Stanford 9 test. Is this the way curriculum is determined?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Science - Grade Ten				
11/12/96	Toni Lynne DeVori Wood County Schs. Parkersburg, WV 26101	Please note this course is biology based. It could read Science Ten "Biology Based."		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Biology Eleven/Twelve				
11/12/96	Toni Lynne DeVori Wood County Schs. Parkersburg, WV 26101	Allow Human Anatomy and physiology to count as this elective. It could say "can be used as a biology elective eleven/twelve." Some schools have this elective in place and were counting this as an advanced biology elective.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
		INSTRUCTIONAL OBJECTIVES Human Anatomy and Physiology		
11/12/96	Toni Lynne DeVori Wood County Schs. Parkersburg, WV 26101	Allow this to count as a biology eleven/twelve elective.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-4. Summary of the Instructional Goals and Objectives				
11/01/96	Karen Robertson-Thorn South Middle School Monongalia County	Justification of previous costs for reading materials is highly questionable. With 17 years of experience in the teaching of LD, developmental reading and remedial reading and a Masters + 45, where do I fit within the new framework of instructional objectives, set forth in Policy 2520?		
11/01/96	Mary Tucker Taylor County Tech.Ctr. Grafton, WV 26354 Lewis McManus Charleston, WV W.T. Brotherton Spilman, Thomas,Battle Charleston, WV	The summary should be expanded to read, "The Instructional goals and objectives provide a focus for teachers to teach and students to learn those skills and competencies essential for future success in the workplace or in further education <u>and to be lifelong good citizens of the community.</u> "		
11/12/96	Debra Moore 6206 MacCorkle Ave St. Albans, WV 25177	I am concerned that 28 credits for graduation is too much. I am concerned that we won't be teaching ability level math. I think we are doing our students a disservice if they aren't given an opportunity to develop their individual talents, such as sewing, cooking, wood work, visual arts or music.		

INSTRUCTIONAL GOALS AND OBJECTIVES

POLICY 2520

COMMENT LOG

November 13, 1996 - November 15, 1996

December State Board Meeting
Part II

ACTION TYPE

N = No Response
NA = Not Accepted
A = Accepted
- = Negative
+ = Positive
0 = Neutral

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General.				
11/13/96	Sheila Edwards Route 3, Box 108B Washington, WV 26181 Kathy Morehead Parkersburg, WV	Early Childhood K-2 - objectives are unsuitable for five-year-olds.		
11/13/96	Ruth Ann Paskell Milton Elementary Cabell County	Please do not test children on social studies and science. Teachers are being given more non-teaching responsibilities with nothing ever being taken away. We are required to introduce too much with little time to practice skills. 4.37 is too difficult.		
11/13/96	Melody Faidrich Hedgesville Middle Berkeley County	One half of a year is not sufficient time in which to master effectively the detailed knowledge obviously expected by the assessment instrument.		
11/13/96	Judith Blake Schumate 1236 Park Avenue Charleston, W V 25302	These goals and objectives are too prescriptive. We are turning to state control of even how we teach skills.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/13/96	Jay Folden 1106 Hollyberry Lane So. Charleston, WV 25309	We need to raise standards but they need to be reachable by all students, not just the upward crust of society. Take what we have and make sure they are mastered before proceeding on to more.		
11/13/96	Stephen Duckworth 205 Maple Avenue New Martinsville, WV 26155 Deborah Rothachen Sardis, OH 43946	I have a problem with the comment that this policy does not increase costs.		
11/13/96	Donna Adams Cabell County	Why is the instructional chart changing to say Social Studies and Science will be taught daily in grades three and four? Under S.B. 300 the objectives have been pushed down from first grade to kindergarten and many are not developmentally appropriate for five year olds. Example: LA K.48, K.49, K.50, K.53 -- Math K.2, K.3, K.7, K.11. Other grades also pushed down. Example: LA 1.35, 1.42, 1.107, 2.73, 2.74 -- Math 1.1, 2.1, 1.13, 1.15, 1.28, 2.4, 3.1, 3.26, 4.3 -- Science 1.11, 2.11, 3.11, and 4.11.		
11/13/96	Katherine Snyder Marlinton Elementary Pochontas County	It appears you have segregated the integrated language arts and very few process-type skills.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/13/96	Carol Cunningham P.O. Box 7 Evans, WV 25241	These are unrealistic expectations for most seventh graders.		
11/13/96	Derby Hammond Jefferson County 205 Maple Avenue New Martinsville, WV 26155	I feel that the time lines stated in many of the policies needs to be extended to the school year 1998-99.		
11/13/96	Barbara J. Erps Bramwell School Mercer County	I like rigorously and challenging a curriculum and well-defined curriculum		
11/14/96	Bretta Gibbs Jefferson County	Policy 2520 should be revamped. Readiness should be added to kindergarten. K.11, K.19, K.24, K.25, K.26, K.54, K.57, K.58 and K.59 are not developmentally appropriate and should be deleted. 1.101, 1.102, 1.109, 1.23, 1.27 and 1.28 should also be reexamined for the same reason. Generally, all the implementation dates in all of the policies must be extended for a minimum of one year if school systems are to seriously revamp existing programs. I support the idea of changing the curriculum to reflect the assessment instrument.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/14/96	Elissa H. Holt Ripley Middle School Jackson County	Lofty general statement - sounds good as long as word "encourage" is emphasized and not "expected." All students do not enter eighth grade with mastery of previously taught goals.		
11/14/96	Yvonne Lannan Ripley Middle School Jackson County	When students arrive on grade level, it will be possible to teach utilizing stated objectives and goals.		
11/14/96	Rebecca Goodwin Kanawha County	Content and test alignment is important, but developing objectives from one form of one test place an inappropriate emphasis on the test.		
11/14/96	WV Adv. Council for the Education of Exceptional Children 100 Angus E. Peyton Dr. So. Chas., WV 25303	The availability of consistent grade level curricular expectations provides a common reference for students, parents, and teachers.		
11/14/96	Irene Murphy 711 Sycamore St. Ravenswood, WV 26164	It is a shame to let a test direct West Virginia's curriculum.		
11/14/96	Zenna Hall 804 17th Street Vienna, WV 26105	S.B. 300 and the policies are putting an additional burden on an already overloaded teaching and administrative staff.		
11/14/96	Ashford Rumble Elem. Boone County	Seems to imply a rapid push down of skills. There leaves no room for creativity.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/14/96	Jean Kuhn Simpson Elementary Harrison County Carolyn Straight Norma White Janet Gilmer	Please do not take our gift of music out of the classroom. Children need to be able to express themselves through art, music, and physical education. This bill is wanting to take the fun out of the classroom.		
11/14/96	Carol J. Sutphin	Many of the objectives set forth for kindergarten students are outrageous. Taking the kindergarten aides out of the classroom is not the answer. As a first grade teacher, the children were upset when they had to take the STEP test, administering the Metropolitan Readiness Test will be even worse.		
11/14/96	New Martinsville School Wetzel County	How can this be implemented at no cost to schools or county board? How can reteaching be completed daily for each student in every subject? Reteach required unrealistic, no funds. How can the curriculum focus on mastery of critical skills with immediate reteaching?		
11/14/96	WV Association of Young Children 929 Stewart St. Morgantown, WV 26505	Many of these objectives are not suitable for kindergarten children.		
11/14/96	Pat Pate PO Box 95 Ripley, WV 25271	These objectives would be fine if the students were on grade level.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/14/96	Richard Westfall 411 Second Street Evans, WV 23241	How can we know what to teach from and what will you expect five years from now?		
11/14/96	Jefferson Elementary Wood County	Many of the objectives are unsuitable for five year olds. There were no current early childhood educators on the committee		
11/14/96	Ripley Middle School Jackson County	We need to return WV studies to a full year class and not a semester.		
11/14/96	Brenda Stephens Mineral Wells School Wood County	Some objectives are not appropriate for kindergarten students. Some examples shown under kindergarten English language arts.		
11/14/96	Janice Kable Jefferson County	The idea of developing a curriculum tool from a standardized test makes no educational sense.		
11/14/96	Mary Ann Galloway Warwood Middle Sch. Ohio County	Good!		
11/14/96	Christy C. Rodgers 105 Church St. Lewisburg, WV 24901	My concern is for students who will be required to participate in remedial classes will have fewer elective class options and may not be permitted to enroll in art courses.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/14/96	Sandra Skidmore	1) How will we be able to get resources? 2) Can our county develop a sequential format of the curriculum? 3) The state adopted text should include textbooks which include application of objectives and critical thinking skills. 4) Will all classes be equipped with computers and programs? 5) It is difficult to understand what to teach or what the child is expected to know. 6) How can the teachers be expected to teach and be held accountable for such a broad scope? 7) The curriculum is fragmented in its current format. The curriculum is teaching to the test. 8) The introductory description given for the sixth and seventh grade curriculum does not match items listed in the curriculum. 9) All disciplines are too broad. 10) Someone has taken the test and the curriculum thrown together without an idea of how the curriculum could be accomplished. 11) We request that a thorough staff development/in-service be provided.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/14/96	Rebecca Moore Keith Herrick Darrell Ballard Joanne Fawcett Magnolia HS Wetzel County	The instructional goals are too general, more information regarding a standardized testing program is needed.		
11/15/96	Wayne Pelts Pikeview High School Mercer County	Changing the sequencing of our required courses makes no sense to me. Is it true that our curriculum was rewritten to go along with the required S.A.T. test? Why? American history Parts I and II would not be taught together? Why would tenth grade world history interrupt this sequence? Covering four more centuries is not possible. Why has world history and American history been combined for the tenth grade? These are two very distinct courses. Has the test questions on the S.A.T. determined what our learning outcomes should be, even if it is not part of the curriculum? Now, for another area of concern, the elective proposal - our students love our "street law" course; they also appreciate psychology. Your proposal would eliminate these great courses from our curriculum. How sad it will be in our school if our successful electives are no longer offered.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/15/96	Judy B. Thomas, Pres. The Ashland Inc. Ashland, KY 41114 Lloyd P. Calvert Susan Fleming James Morgan	I urge you to require a high school economics course.		
11/15/96	Wirt Co. Middle School PO Box 699 Elizabeth, WV 26160	I am concerned that the math anxiety children face in today's world will only be heightened by forcing academic work upon them which they may not be ready to attempt. Can the consumers' math and business math classes not benefit the students enough? If students must take time for remediation their desire to work in class and even stay in school will be adversely affected.		
11/15/96	Deborah Shaw Shepherdstown Jr. High Jefferson County	I am appalled by this move to "teach the test." I am concerned that our curriculum is being driven by a standardized test.		
11/15/96	Melody Gaidrich Hedgesville Middle Sch. Berkeley County	The students who will be tested in the spring of their sixth grade year will have received only one-half year of American history in the fifth grade. I fail to understand why goals and objectives conducive to the learning needed for the standardized test were not more fully developed for these proposed courses.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/15/96	P. Plauger Homestead Elementary Randolph County Austin Himes Morgantown, WV 26505 Peter Rush Star City, WV 26505 Bob Frey Mt. Barbershop Course Parkersburg, WV 26101	I am concerned that de-emphasizing art, music, P.E., and health in grades K-4. When would teachers get planning time?		
11/15/96	David P. Reed Executive Vice President One Valley Bank Huntington, WV 25779 Susan Flemming Ashland, KY 41105	I request that you require high school students to take a course in economics as a part of the new social studies curriculum.		
11/15/96	Nanette Jones Andrew Jackson Middle Kanawha County	The amount of material to be covered in timely fashion seems excessive.		
11/15/96	P. Malone Capital High Kanawha County	I like the goals!		
11/15/96	E. Bank Jr. High Kanawha County	Most of the goals and objectives are directed to the high or above average student. Many average students would have difficulty meeting some of the objectives.		
11/15/96	Carol Green Chandler Elementary Kanawha County	The problem-solving in this math series are a must and is really good. It does help them with some higher learning thinking skills.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/15/96	Ann Withrow Point Harmony Elem. Kanawha County	The students I inherit at fifth grade are not prepared to handle the suggested objectives listed for fifth level. I have to spend too much time teaching/reteaching basic skills and problem solving to cover the fifth grade curriculum.		
11/15/96	Elk Elementary Center Kanawha County	Some standards are not developmentally appropriate for kindergarten.		
11/15/96	Oakwood Elementary Kanawha County	The overall goals seem reasonable. How much time will it take to assess these objectives?		
11/15/96	Lori Wroth Belle Elementary Kanawha County	I like how the objectives have been "pushed up" to go with the N.C.T.M. Standards. It seems very thorough and right with the times.		
11/15/96	Vonda Gwin Staunton Elementary Kanawha County	I believe the new objectives contain too many "abstract" elements, and according to research studies, children of this age are still, for the most part, still working in the concrete operational level. Too much is being put on these young children and I feel it highly unfair to them. You can't expect a child to master skills that they are not developmentally ready for.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/15/96	Pt. Harmony Elem. Kanawha County	We need to emphasize the basics and learn them, not introduce them along with the extra "fluff" (fractions, decimals).		
11/15/96	Suzanne Leonard Staunton Elementary Kanawha County	I'm concerned about the mismatch between the developmental reading level and the level of thinking that these objectives require. My nine year old students are concrete thinkers.		
11/15/96	Susan McKay Anita Sivor Belle Elementary Kanawha County	Great goals but attainment is totally unrealistic.		
11/15/96	Janet Lutz Alum Creek Elem. Kanawha County	I enjoy using all the math manipulatives and the activities that encourage higher order thinking skills.		
11/15/96	Bridgeview Elementary Kanawha County	We feel health needs to be taught as a separate subject.		
11/15/96	Clark/Criser/Angelo Sissonville Elementary Kanawha County	This text is too wordy and technical. We think it is very ambitious to expect every child should master each designated skill.		
11/15/96	Chelyan Elementary Kanawha County	Disagree with use of calculator for kindergarten students.		
11/15/96	Sissonville Elementary Kanawha County	Standards are much higher than in our previous program.		
11/15/96	Cedar Grove Elem. Kanawha County	Program does not follow grade card.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/15/96	Highlawn Elementary Kanawha County	Reasonable.		
11/15/96	Pinch Elementary Kanawha County	We feel most goals seem appropriate except for the objectives in computer technology. Some questions ask for advanced thinking and may be too difficult for some.		
11/15/96	Bonnie Riffle 24 Central Avenue Buckhannon, WV 26201	I am happy to see some specific objectives by grade level that are understandable.		
11/15/96	Terry Winnel 1206 C Lockwood St. Belfry, OH 45714	Mandating performance standards for students are not a realistic method of addressing our problems. There are no consequences, penalties, etc. for not meeting the standards. Therefore, the standards are irrelevant to students and the burden of accountability will be borne by those least to blame - classroom teachers.		
11/15/96	Elizabeth Beale Mr. Wolf Jane Higginbotham Mark C. Fawcett Magnolia High School Wetzel County Nettie Herrick New Martinsville, WV 26155	Instructional goals as provided by the state department are too general. In addition to instructional goals, more specific information regarding material which will be assessed by the state standardized testing program is needed.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
11/15/96	N. Jefferson Elementary Jefferson County (names available upon request)	§126-44-1. General. (continued) 1) Developmentally appropriate practices of teaching a child at his/her own level in the primary grades have been ignored. 2) There is too heavy an emphasis on social studies and science in the primary grades. 3) The objectives are based on an achievement test produced by a national testing company. 4) Only 5-15 percent of our schools will master all of these objectives. 5) American educators teach far more skills and concepts with less mastery than their European counterparts. 6) Many objectives are vague or not easily measurable. 7) If we are expected to implement and test the objectives during the 1996-97 school year, they needed to be in place prior to August 1996. 8) Some objectives are isolated from others in the same concept area. 9) Many objectives are too complicated 10) Each discipline has computer/technology objectives for which most classrooms lack the appropriate software and hardware to implement. Sixth graders need to use graphing software to create line, circle and bar graphs, histograms, tables and charts (Math - 6.56).		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/15/96	N. Jefferson Elementary (continued)	11) Textbooks chosen from the state-approved adoption list are inadequate. 12) The objectives are too numerous, difficult, disjointed, complex, non-developmentally appropriate and hard to measure to be effective.		
11/15/96	Carole Say	Some of the goals and objectives are in my opinion are unattainable. Reconsider these objectives and goals and make them more concrete and attainable for the students.		
11/15/96	Harpers Ferry Jr. HS Jefferson County	Too much haste in getting legislation passed.		
11/15/96	Stacy Patton N. Jefferson Elementary Jefferson County	I am concerned that many of the objectives for third grade are developmentally inappropriate. We do not have resources to meet the objectives for social studies and science. Our textbooks do not address these objectives. We will need money to get resources.		
11/15/96	Musselman Middle Sch. Berkeley County	Goals and objectives need to reflect students' learning levels. Curriculum appears to be accelerated and too broad		
11/15/96	Mary Lynn Powell 164 Iroquois Trail Ona, WV 25545 Salt Rock Elem. Faculty Salt Rock, WV 25559	Many of the new objectives are from the first grade curriculum. This will cause the children to learn rote facts without developing the understanding behind the concepts.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/15/96	Janie Fout 700 Sr. Drive Keyser, WV 26726	This is a noble undertaking. Also, the characteristics of young children seem not to have been seriously considered.		
11/15/96	Howard Naylor Clendenin Middle Sch. Kanawha County	As I review this form it appears to me, that this is the beginning of the end, for an area that I have taught in for many years. We as Technology Education teachers have taught and reinforced in the areas of science and mathematics.		
11/15/96	WV Assoc. Of Family Consumer Science Route 3, Box 89-E-A Weston, WV 26452	I am writing in support of the inclusion of courses in family and consumer sciences for WV students at the middle and high school levels.		
11/15/96	Terry Sauvageot 312 Oak Tree Lane So. Chas. WV 25309	Why are we requiring social studies and science to be taught daily in grades 3-4. I feel the goals and objectives have been to Stanford 9 test driven. Advancing children to the next level when mastery occurs could cause some socially unacceptable situations (i.e., a fourth grader at second grade age level).		
11/15/96	Valley View Elementary Berkeley County	Kindergarten is becoming watered-down first grade. Children learn when they are ready to learn and not before.		
11/15/96	Jim Williams Rt. 1, Box 178 Ronceverte, WV 24970	The new curriculum does not meet the new National Geography Standards for 2000.		
11/15/96	Marion Allen Rainelle Elementary Kanawha County	You are expecting children to be rocket-scientist by the time they leave elementary school.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/15/96	Martha Warren Pam Pitrolo Paula Dolog Nan Murray Paulette Trimble Vonda Mowrey Brenda Joe Julia Shaw Carole McPherson D. Satterfield Mary Adams Carla Luketin John Defazio Mary Westfall Suzie Clark S. J. Brown G. H. Budd Diana Munza Kathy Jacquez Melissa DeWitt Shirley Downs Rusty Campbell	Marion County document response K-12 is available upon request.		
11/15/96	John Paull Hogg 116 Sunny Drive Barboursville, WV 25504	I am voicing my displeasure with the proposed changes in the social studies curriculum. 1) a full year of WV studies is at least a semester too much. 2) having American history in the ninth grade will virtually eliminate the possibility of having an AP American history course in junior high. 3) distresses me most is "performance-based objectives."		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/15/96	Steve Miker Rt. 1, Box 190 Shinnston, WV 26431 Robert VanGilder Fairmont, WV 26554	It is my understanding this bill will de-emphasize music and art in grades K-4.		
11/15/96	Skip Wilson Rt. 2, Box 43 Fairview, WV 26570	I'm opposed to several of the subjects that will be de-emphasized in the classroom.		
11/15/96	Sharon Dawes Elem. Kanawha County	1) Everyone does not learn phonics. 2) Many items are not developmentally appropriate. 3) Mastery requirements need to be sensitive to cultural differences (such as 2.55). 4) All other objectives will fall into place at age appropriate levels. 5) Children mature mentally and physically at different rates.		
11/15/96	Joyce Chapman Winchester Ave. School Berkeley County	Not enough time to have grade level and parent meetings to discuss such important <i>changes</i> !!		
11/15/96	Blue Ridge Elementary Jefferson County	Too many LO's to accomplish. It makes no sense to develop goals and objectives that were formulated from a standardized test.		
11/15/96	Kenneth Sims Janice Golden Berkeley Springs	We feel that the computer/technology goals cannot be attainable without the necessary funds to implement them.		
11/15/96	Dr. Victoria Fergus Box 6111, WVU Morgantown, WV 26506	OK - 2520 should include all programs of study.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/15/96	Nancy Gant Franklin Elementary Wood County	I believe reteaching should be done at the discretion of the teacher and not be made mandatory. I sincerely hope teachers are not going to be required to list the goals and objective numbers on their lesson plans		
11/15/96	Donna Adams Cabell County	In general the objectives have been pushed down. Many are not developmentally appropriate for children five years old. The stress of so many objectives tends to drive teachers back to worksheets and memorization to meet a benchmark on a standardized test. I think this curriculum needs a great amount of revision to meet the needs of children K-4. Expecting mastery of objectives a year sooner will just frustrate many children and kill the joy of learning. The benchmarks for all children should not be above grade level. Viewing is critical in today's world. I feel it should be separate, if all the other components are separate.		
11/15/96	Lawrence Hitt Shepherdstown Elem. Jefferson County	Assessment instruments should be developed to match present curriculum, not the reverse.		
11/15/96	Joyce Hobbs Berkeley County	With an excellent science curriculum framework, educators are having a difficult time rationalizing changing to "teach a test."		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-1. General. (continued)				
11/15/96	Christy Rodgers Carnegie Hall Lewisburg, WV 24901	We are concerned about the potentially negative impact SB 300 could have on arts programming in our schools.		
11/15/96	Lady of Fatima School 535 Norway Avenue Huntington, WV 25702	Our major concern is the cost to the schools - new textbooks and additional software and science materials will be required.		
11/15/96	Charles Regan Nat'l. Geographic Soc. Washington, DC 20036	Congratulations to the WVDE for your ambitious Instructional Goals and Objectives for WV schools. We are pleased to see the geography strand running throughout the social studies curriculum at all levels. The alliance finds itself in a position to work with WVDE in providing professional development training to WV teachers.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-2. Purpose and Format.				
11/13/96	Sheila Edwards Route 3, Box 108B Washington, WV 26181 Kathy Morehead Parkersburg, WV 26104	Early childhood research shows that young children need time and concrete experiences to progress through the natural stages of development.		
11/13/96	Stephen Duckworth 205 Maple Avenue New Martinsville, WV 26155	Combining all goals is a great idea!		
11/14/96	Rebecca Goodwin Kanawha County	The establishment of clear goals is commendable. The format is useful and easy to understand.		
11/14/96	Ashford Rumble Elem. Boone County	Looks like based on grandiose ideas, not on the real children.		
11/14/96	WV Association of Young Children 929 Stewart St. Morgantown, WV 26505	Many of these objectives are too hard for kindergarten.		
11/14/96	Nita Pettigrew 404 Lombardy Drive Williamstown, WV 26187	It is not right that a testing company is establishing our curriculum. The humanistic aspect of teaching will be lost.		
11/14/96	Rosedale Elementary Fayette County	We feel many of these objectives are unrealistic for science and social studies. There is no way we can teach English language arts/math/social studies/science all in one day. Our textbooks don't cover many of the objectives.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-2. Purpose and Format (continued).				
11/14/96	Williamstown Elem. Wood County	Early childhood research shows that young children need time to progress through the natural stages of development. Many kindergarten goals and objectives are more appropriate in the first grade. By making them part of the K curriculum, you are creating situations where many children will be at risk for failure		
11/14/96	Mary Ann Galloway Warwood Middle Sch. Ohio County	Good! However, money must come from the state for all this new technology.		
11/14/96	Joyce Hobbs Berkeley County	The bolding of curtain items may insure that these items may be taught to the exclusion of the non-bolded items.		
11/15/96	Bonnie Riffle 24 Central Avenue Buckhannon, WV 26201	I believe that objectives should be better organized to make it easier to follow in some areas. Sources for reference materials would be helpful in science and social studies area. A checklist for grade level consistent throughout the state would help uniformity.		
11/15/96	Patricia Hubbard Jefferson County	A well-defined curriculum PreK-12 is very much needed - very good!		
11/15/96	Lawrence Hitt Shepherdstown Elem. Jefferson County	Format is good. I understand the purpose.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-2. Purpose and Format. (continued)				
11/15/96	Musselman Middle Sch. Berkeley County	These are too open ended. Too many expectations at middle school and high school levels.		
11/15/96	Terry Sauvageot 312 Oak Tree Lane So. Chas, WV 25309	The format is deinitely user-friendly.		
11/15/96	Bridge Elementary Faculty Senate Kanawha County	Very clear.		
11/15/96	Marion Allen Rainelle Elementary Kanawha County	The idea of teaching - reteaching is not a new concept.		
11/15/96	Dr. Victoria Fergus Box 6111, WVU Morgantown, WV 26506	OK - according to P.L. 103.2227 of Goal 3 of Goals2000 Ed. Act - the arts are part of the core of subjects. I commend the writing teams for all their hard work.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-3. Incorporation by Reference.				
		INSTRUCTIONAL GOALS English Language Arts		
11/13/96	Lynn McEldowney 414 Pennsylvania Ave. Nutter Fort, WV 26301	Suggested addition is in brackets. The social studies curriculum prepares students for gainful employment, post secondary education, and/or college [and to be lifelong good citizens of the community].		
11/13/96	Jennifer Kohlhepp 185 Tuscavilla Hills Charles Town, WV 25414	I believe vocabulary should also be studied in conjunction with literature.		
11/13/96	Jay Folden 1106 Hollyberry Lane So. Charleston, WV 25309	The goals are good but how are we going to get all of the students on the same page?		
11/13/96	Judith Blake Schumate 1236 Park Avenue Charleston, W 25302	Substituting English 101-102 credits for junior/senior English will leave some big holes in students' education.		
11/13/96	Katherine Snyder Marlinton Elementary Pocahontas County	Instead of integrating language arts instruction, you have segregated the components. I recommend language and writing be merged. Shouldn't spelling be integrated with writing?		
11/13/96	Carol Cunningham P.O. Box 7 Evans, WV 25241	There is not enough time in the school year to incorporate these goals.		
11/14/96	Midland Trail Elem. Fayette County Schools	Vocabulary should not be used as spelling.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS English Language Arts (continued)				
11/14/96	Elissa H. Holt 116 Jackson Avenue Ripley, WV 25271	8.64 is outdated. 8.59 - begin stressing keyboarding at earlier grades. 8.96 - a participial phase is beyond students.		
11/14/96	Yvonne Lannan Ripley Middle School Jackson County	8.64 - if electronic mastery is expected, computers' access should be provided for all students.		
11/14/96	Gail Woods Route 1, Box 1240 Harpers Ferry, WV 25425	My major concern relates to the teaching of vocabulary. Nowhere is their indication that vocabulary is taught in connection with literature.		
11/14/96	Ashford Rumble Elem. Boone County	I feel many of the goals are unclearly written. Students will need access to a library; not many schools can provide this opportunity.		
11/14/96	Jane Graham Ripley Middle School Jackson County	These goals may be wonderful for students that arrive in the seventh and eighth grade but all students are not on grade level.		
11/14/96	Pat Pate PO Box 95 Ripley, WV 25271	Concerning 7.99 - example is incorrect. We do not have computers in language arts class.		
11/14/96	McKinley School Wood County	I have children who can barely talk. They need some basic skills. I feel assessment approach is unrealistic and not in the best interests of children.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS English Language Arts (continued)				
11/14/96	Patti Haught Jackson County Schools	Several items are not age appropriate for our sixth graders. Many objectives are not listed in the textbooks.		
11/14/96	Brenda Stephens Mineral Wells School Wood County	K.24, K.25, K.26, K.53, K.54, and K.58 are very difficult to achieve.		
11/15/96	Joyce Hobbs Berkeley County	Viewing and research should be considered.		
11/15/96	Nancy Krynicke Easton Elementary Monongalia County	K.24, K.25, K.26 - not developmentally appropriate. K.28 - should be a grade one objective. K.41, K.54, K.55, K.58 - not developmentally appropriate.		
11/15/96	Homestead School Randolph County	OK		
11/15/96	Judi Fadeley Shepherdstown Jr. High Jefferson County	I take offense in the fact that the test objectives are highlighted in darker print. Installing computers in each classroom will cost a substantial amount of money		
11/15/96	Tamara Bittorf Shepherdstown Jr. High Jefferson County	Keyboarding and word processing cannot be taught unless there are computers available to each student in every classroom.		
11/15/96	Cynthia Staub Shepherdstown Jr. High Jefferson County	The cost to equip all schools (let alone all classrooms) with the required number of computers would be phenomenal!		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS English Language Arts (continued)				
11/15/96	Terry Winnel 1206C Lockwood St. Belfry, OH 45714	These objectives would be appropriate for students who arrive "on grade level." Most students are at least a notch or two below grade level and many simply lack the intellectual capacity to close the gap.		
11/15/96	Susan Williams 1612 Oak Street Parkersburg, WV 26101	K.24, K.25, K.26 - are first grade objectives.		
11/15/96	Jennifer Wells Harpers Ferry Jr. HS Jefferson County	If our school is provided with the computers needed and professional instruction is given so that we can teach our students effectively on the use of the computers, then I agree with the proposed Policy 2520.		
11/15/96	Harpers Ferry Jr. HS Jefferson County	Goals were realistic except for computer use which we do not have access to.		
11/15/96	Bridge Elem.Fac. Senate Kanawha County	Very in-depth - will <i>all</i> students be required to master these goals?		
11/15/96	Valley View Elementary Berkeley County	I will do well to get some children through the pre-writing stage.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS English Language Arts (continued)				
11/15/96	Lady of Fatima School 535 Norway Avenue Huntington, WV 25702	Would like explanation or examples on writing K-54.		
11/15/96	Donna Roberts P.O. Box 146 Bloomington, WV 25024 Nancy Woody Marianna Lyon Bryan Elkins Helen Arbogast Sherry Waugh Lisa Loune Boone County	Goals and objectives do not correspond with county goals and objectives, textbooks and grade cards. Critical thinking skills too complicated for students in rural areas.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Mathematics				
11/13/96	Jay Folden 1106 Hollyberry Lane So. Charleston, WV 25309	Special education students will not be able to master the higher math classes.		
11/14/96	Charles W. Poole Roane County	Not much emphasis on practical - hand-on practice.		
11/14/96	Midland Trail Elem. Fayette County	The concepts of algebra and geometry are too abstract for early, primary students.		
11/14/96	Elizabeth Dean Wetzel County	Increased expectations in mathematics are a positive portion of this document		
11/14/96	Ripley Middle School Jackson County	The instructional goals are realistic.		
11/14/96	Brenda Stephens Mineral Wells School Wood County	K.3 is an advanced objective for five year olds.		
11/14/96	Janice Kable Jefferson County	A statement should be included to emphasize the use of correct vocabulary beginning at the kindergarten level.		
11/14/96	Joyce Hobbs Berkeley County	Emphasize the correct terminology beginning at kindergarten. Where are the workplace readiness skills at K-8?		
11/15/96	Nancy Krynicke Easton Elementary Monongalia County	K.3 - should be introduced but, not expected for mastery level. K.5 - should read value less than 10 cents. K.6 - should read groups of 10 or less. K.10, K.11 and K.36 - not developmentally appropriate.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Mathematics (continued)				
11/15/96	Homestead School Randolph County	OK		
11/15/96	Capital High Kanawha County	I like the goals for math, but I still can't convince myself that algebra is important for all students.		
11/15/96	E. Bank Jr. High Kanawha County	If students going into secondary schools cannot add, subtract, multiply or divide, these goals are unreachable.		
11/15/96	Cedar Grove Com. Sch. Kanawha County	Acceptable as written.		
11/15/96	Kathy Stout Holz Elementary Kanawha County	Excellent! NCTM Standards are the way to go!		
11/15/96	Carol Green Chandler Elementary Kanawha County	Critical thinking skills have always been high on my list.		
11/15/96	Ann Withrow Point Harmony Elem. Kanawha County	Consider developing a resource document for each grade level.		
11/15/96	Dunbar Elementary Kanawha County	An instructional goal needs to be written addressing computation skills.		
11/15/96	Belle Elementary Kanawha County	Specific instructional goals for teachers are an excellent addition.		
11/15/96	Susan McKay Anita Sivor Belle Elementary Kanawha County	These goals require significant training for teachers and revamping of schools.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Mathematics (continued)				
11/15/96	Pt. Harmony Elem. Kanawha County Overbrook Elem.	More emphasis needs to be put on computation. We need to make skills concrete before introducing new skills.		
11/15/96	B. Miller Dunbar Elementary Kanawha County	Agree.		
11/15/96	Persinger Sissonville Elementary Kanawha County	1.1 - disagree. 1.53 - disagree.		
11/15/96	Clark/Criser/Angelo Sissonville Elementary Kanawha County	It is first necessary to teach (+ - x) facts. Why a calculator for 5's and 10's?		
11/15/96	Pinch Elementary Kanawha County	Goals appear to be very comprehensive. Some are difficult to measure.		
11/15/96	Susan Williams 1612 Oak Street Parkersburg, WV 2610	Counting to 100 is not a good kindergarten goal, it is a first grade goal A two-step problem is not appropriate for this level.		
11/15/96	Alban Elem. Faculty Sen. Kanawha County	Problem solving and critical thinking should not outweigh the importance of computation.		
11/15/96	Bridge Elementary Faculty Senate Kanawha County	How can we say "all students are to value mathematics?"		
11/15/96	Valley View Elementary Berkeley County	Some of the goals I consider more activities.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
		INSTRUCTIONAL GOALS Mathematics (continued)		
11/15/96	Blue Ridge Elementary Jefferson County	Why are workplace skills not identified in math K-8?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Social Studies				
11/13/96	Paula Meredith Rt. 1, Box 603 Princeton, WV 24746	A knowledge of geography would be excellent for students to learn at this age.		
11/13/96	Patricia Wooten Rt. 7, Box 301A So. Charleston, WV 25309	I recommend an elective course in geography at the high school level.		
11/13/96	Katherine Snyder Marlington Elementary Pocahontas County	I thought the "old" social studies curriculum was well done. Why change it?		
11/13/96	Margaret Pennington Scarbro Elementary Fayette County	Incorporating civics and government for K-4 are not developmentally appropriate. Have you seen a text in this state that covers this material in these grades?		
11/13/96	Barbara J. Erps Bramwell School Mercer County	I support an elective course in geography.		
11/14/96	Charles W. Poole Roane County Schools	Not much about hands-on.		
11/14/96	Rebecca Goodwin Kanawha County	The social studies goals are well stated. The curriculum 9-12 is entirely history. This balance needs to be redressed.		
11/14/96	Nancy Colebank Morgantown HS Monongalia County	I believe the current social studies curriculum without the suggested changes is more appropriate to our students' needs. Chronological order is important.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
Social Studies (continued)				
11/14/96	James Field Morgantown High Sch. Monongalia County	I suggest keeping grades 9-10-11 in the sequence we have now.		
11/14/96	Midland Trail Elem. Fayette County	Teaches too much, too soon.		
11/14/96	Beth Harwick Dana Smith Wetzel County	It is impossible to find time to do social studies daily.		
11/14/96	Ashford Rumble Elem. Boone County	An amazing amount to be covered for a subject that will not be taught each day. Adding career awareness is a good idea but will there be materials provided for teacher use?		
11/14/96	Mary Ann Galloway Warwood Middle Sch. Ohio County	Need for a fourth year of social studies on the high school level, not just elective.		
11/15/96	Joyce Hobbs Berkeley County	The social studies curriculum is very different from what we are presently doing.		
11/15/96	Nancy Krynicke Easton Elementary Monongalia County	K.11 - should read "introduce" not "identify." K.12 - not developmentally appropriate. K.17 - identify four seasons to be recognized.		
11/15/96	Homestead School Randolph County	OK		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
Social Studies (continued)				
11/15/96	Alban Elem.Faculty Sen. Kanawha County	There is not enough time to teach both social studies and science daily in elementary school.		
11/15/96	Thomas Yester Morgantown HS Monongalia County	The format of splitting the two US history courses does not seem to be as advantages to continuity of learning as found in your new proposals.		
11/15/96	Janie Fout 700 Sr. Drive Keyser, WV 26726	Cultural diversity does not seem to be addressed.		
11/15/96	Valley View Elementary Berkeley County	Most realistic of all the goals for kindergarten children.		
11/15/96	Blue Ridge Elementary Jefferson County	Instead of goals and objectives we have been given methods and strategies of evaluation.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Science				
11/13/96	Jay Folden 1106 Hollyberry Lane So. Chas., WV 25309	The science courses seemed to be watered down.		
11/13/96	Katherine Snyder Marlinton Elementary Pocahontas County	I really liked the "old" science curriculum, why change it?		
11/14/96	Beth Harwick Dana Smith Wetzel County Schools	In grade three it is difficult to get to science on a daily basis.		
11/14/96	Ashford Rumble Elem. Boone County	An amazing amount to be covered for a subject that will not be required to be taught each day. If 50% is hands-on lab work, teachers need more materials and more planning time.		
11/14/96	Rosedale Elementary Fayette County	We haven't the facilities to provide 50% of instructional time as hands-on activities.		
11/14/96	Janice Kable Jefferson County	A viable science curriculum was already in place.		
11/15/96	Sharon Athey 817 High St. Charles Town, WV 25414	I feel the objectives do not correlate with our curriculum.		
11/15/96	Homestead School Randolph County	OK		
11/15/96	Alban Elem. Faculty Sen. Kanawha County	There is not enough time to teach social studies and science daily.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Science (continued)				
11/15/96	Valley View Elementary Berkeley County	Whatever happened to quality was more important than quantity?		
11/15/96	Sharon Dawes Elem. Kanawha County	Objectives are too broad. Too many concepts.		
11/15/96	Blue Ridge Elementary Jefferson County	Being in "awe" and "wonder" are invalid indicators of skill acquisition.		
11/15/96	Dr. Victoria Fergus Box 6111, WVU Morgantown, WV 26506	I have problems with vagueness of "awe of wonderment." How high they raise their eyebrows.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Process/Workplace Goals				
11/13/96	Jay Folden 1106 Hollyberry Lane So. Charleston, WV 25309	The general students and special education students will have no courses to apply the technology skills. We need programs such as AutoCAD and numerical control machine.		
11/14/96	Rebecca J. Moore 120 South First Ave. Paden City, WV 26159	The fiscal obligations are unknown.		
11/14/96	Ashford Rumble Elem. Boone County	More guidelines are needed to determine awarding units of credit.		
11/14/96	Janice Kable Jefferson County	Why are workplace skills not identified in math K-8?		
11/15/96	Will Carter Governor's Office	Suggested document revisions on file.		
11/15/96	Capital High Kanawha County	I personally think these are great, but are they feasible?		
11/15/96	Dupont Jr. High Kanawha County	Process/workplace self management - seems utopian.		
11/15/96	Cedar Grove Com. Sch. Kanawha County	It is difficult to do technology work when there are no computers in the classrooms.		
11/15/96	Carol Green Chandler Elementary Kanawha County	These goals and objectives are fine and will well prepare our students for the future.		
11/15/96	Ann Withrow Point Harmony Elem. Kanawha County	I am not convinced elementary students are mature enough to mediate/resolve conflicts.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood K-2				
11/13/96	Sheila Edwards Route 3, Box 108B Washington, WV 26181	Children should not be kept from music, art, physical education, etc., for remediation in academic skills.		
11/13/96	Margaret Pennington Scarbro Elementary Fayette County	If music, art, and physical education are to be taught only when the basics are mastered, what happens to those students who require extended instruction in all core areas most of the time? When is this reteaching to be done? Planning periods are mandated by law.		
11/13/96	Amy Cigik 1216 Wren Drive New Martinsville, WV 26155	If advancing to next grade level objectives - please explain how.		
11/14/96	Rebecca Goodwin Kanawha County	The emphasis on language and mathematics is appropriate.		
11/14/96	Midland Trail Elem. Fayette County	Reteach daily isn't possible.		
11/14/96	Irene Murphy 711 Sycamore St. Ravenswood, WV 26164	Grade three should be included.		
11/14/96	Ashford Rumble Elem. Boone County	The goals and objectives are idealistic and too comprehensive. Expectations are too high.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood K-2 (continued)				
11/14/96	Anne Schooley Marion County	I have opposition to the de-emphasizing of art, music, physical education and health in grades K-4.		
11/14/96	WV Association of Young Children 929 Stewart St. Morgantown, WV 26505	Children need to develop in all areas of growth.		
11/14/96	Janice Kable Jefferson County	Too many objectives at each grade level. How can a teacher do so much?		
11/15/96	Homestead School Randolph County	If reteaching is to occur daily, then the kindergarten aide needs to remain in the classroom.		
11/15/96	Janet Lutz - Alum Creek Sissonville Elementary Kanawha County	I agree!		
11/15/96	Michelle Shomo Meranda Bowman Grandview Elementary Kanawha County	I do not think reteaching daily is necessary.		
11/15/96	Highlawn Elementary Kanawha County	I agree with K-2.		
11/15/96	Pinch Elementary Kanawha County	Good standards which will ensure continuity of a core curriculum.		
11/15/96	Bonnie Riffle 24 Central Avenue Buckhannon, WV 26201	I am not sure that third grade can cover all these tested objectives in one year.		
11/15/96	Andrew Heights Elem. Kanawha County	Too much expected.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood K-2 (continued)				
11/15/96	McKinley Elementary Wood County	Money will be needed to update computers.		
11/15/96	Little Birch Faculty Sen. Braxton County	Reteaching of reading and math required daily may not be possible one day depending on personnel and time available.		
11/15/96	Mary Ellen Chapman Rt. 1, Box 195 Cox's Mills, WV 26362	1) Should read "science; social studies the arts (theater, dance, music and visual arts); physical education, health." 2) Teachers should not remove any student from these subjects for the purpose of reteaching other subjects (the arts are vital core subjects which address the needs of auditory, visual and kinesthetic learners).		
11/15/96	Janie Fout 700 Sr. Drive Keyser, WV 26726	The proposed social studies goals should be of equal importance in English language arts and mathematics		
11/15/96	Bridge Elementary Faculty Senate Kanawha County	Does every child reach mastery each day?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood 3-4				
11/13/96	Stephen Duckworth 205 Maple Avenue New Martinsville, WV 26155	Removing minimal instructional time is a step backwards.		
11/14/96	Rebecca Goodwin Kanawha County	Daily instruction of science and social studies presents a barrier for thematic units.		
11/14/96	Cary Parker Mary Toth New Martinsville School Wetzel County	Science and social studies should not be taught daily unless as integrated subjects.		
11/14/96	Midland Trail Elem. Fayette County	Daily teaching of social studies and science isn't possible.		
11/14/96	Beth Harwick Dana Smith Wetzel County	There is not enough time in the day to teach science and social studies every day.		
11/14/96	Ashford Rumble Elem. Boone County	How can teachers have the time to teach new concepts, reteach daily, use extended instructional time in English language arts and math.		
11/14/96	Sarah Jane Slaughter 236 North Hills Drive Parkersburg, WV 26101	My concern is taking the aide out of kindergarten room 50% of the day, it should not be at the expense of the kindergarten student.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood 3-4 (continued)				
11/14/96	Rosedale Elementary Fayette County	It is impossible to teach both social studies and science in the same day. Fourth graders still need a great focus on language, reading and math. It would be a scheduling nightmare to allow students who master certain core subjects to move up a level. Our school stops at fourth grade. Who would teach those advanced core subjects?		
11/15/96	Elk Elementary Center Kanawha County	All subjects should be correlated and integrated throughout the day/week and should be taught daily.		
11/15/96	Susan McKay Anita Sivor Belle Elementary Kanawha County	I do not see how the daily reteaching can be accomplished without smaller class sizes and/or additional teachers.		
11/15/96	Andrew Heights Elem. Kanawha County	Emphasis should be placed in reading and math.		
11/15/96	Joyce Hoffman Franklin Elementary Wood County	Grades three and four should have the same wording as the K-2 chart. Social studies and science should be integrated into the basic skill's program, not taught on a daily basis.		
11/15/96	Ann Withrow Point Harmony Elem. Kanawha County	I do not agree that students mastering instruction grade level objectives in core subject areas are provided opportunity to advance to next grade level objectives.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood 3-4 (continued)				
11/15/96	Kathy Stout Holz Elementary Kanawha County	Something should be stated to show that language arts and math should be integrated to include the science, social studies, art, music, P.E. and health. An early childhood age child needs to see that language arts and math are not separate.		
11/15/96	Carol Greene Chandler Elementary Kanawha County	Fine!		
11/15/96	McKinley Elementary Wood County	4.100 - don't like.		
11/15/96	Little Birch Faculty Sen. Braxton County	Reteaching of reading, math, science, and social studies daily may not be possible depending on personnel and time available in the schedule.		
11/15/96	Alban Elem. Faculty Sen. Kanawha County	Expecting social studies and science to be taught daily will take time away from language arts and math.		
11/15/96	Mary Ellen Chapman Rt. 1, Box 195 Cox's Mills, WV 26342	1) Should read "science, social studies, the arts (theater, dance, music and visual arts), physical education, health." 2) Teachers should not remove any student from these subjects for the purpose of reteaching other subjects (the arts are vital core subjects which address the needs of auditory, visual and kinesthetic learners).		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Early Childhood 3-4 (continued)				
11/15/96	Musselman Middle Sch. Berkeley County	Some children will never get in art, music, physical education or health, is this wise?		
11/15/96	Hillsboro Elementary Pocahontas County	It is impossible to teach both science and social studies daily without a total restructuring.		
11/15/96	Donna Adams Cabell County	Why are we changing the instructional chart to say that social studies and science will be taught daily in grades three and four?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Middle Childhood 5-8				
11/13/96	Marilyn Cunningham Box 480 Clendenin, WV 25045	This should include B.A.S.E. as a way to deliver self-esteem teachings.		
11/13/96	Stephen Duckworth 205 Maple Avenue New Martinsville, WV 26155	This will require funding to implement foreign language.		
11/14/96	Charles W. Poole Roane County Schools	Who is going to fund these new teachers for foreign language?		
11/14/96	Midland Trail Elem. Fayette County Schools	Not enough time in the day to teach everything every day.		
11/14/96	Ashford Rumble Elem. Boone County	The technology objectives are good but many schools are not equipped with computers.		
11/14/96	Linda Fonner New Martinsville School Wetzel County	I feel health need not be a separate subject at grades 5-6. It can easily be integrated with science. We need more counselors to successfully implement developmental guidance.		
11/14/96	Ripley Middle School Jackson County	I agree that mathematics should be taught daily.		
11/14/96	Janice Kable Jefferson County	Science objectives seem to be a hodge podge of facts.		
11/15/96	B. Miller Dunbar Elementary Kanawha County	Agree!		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Middle Childhood 5-8 (continued)				
11/15/96	Pt. Harmony Elem. Kanawha County	English skills need to be strengthened by resource materials.		
11/15/96	McKinley Elementary Wood County	State money will be needed to implement this program.		
11/15/96	Musselman Middle Sch. Berkeley County	How can this be a no-cost program if middle schools must have foreign language?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Adolescent 9-12				
11/14/96	Rebecca Goodwin Kanawha County	Daily instruction of science and social studies presents a barrier for thematic units.		
11/14/96	Janice Kable Jefferson County	Be careful that objectives in science are taught sequentially. The requirements for science have been increased from two to three credits. This is an advantage for all students.		
11/15/96	Joyce Hobbs Berkeley County	Algebra I and one more concept should be phased in as the science was in order for the lower grades to adjust curriculum.		
11/15/96	Capital High Kanawha County	I really don't think these are enough courses for the non-college bound.		
11/15/96	Dupont Jr. High Kanawha County	We have concerns about the algebra I, all students can learn some algebraic concepts, but that all students can be successful in algebra I as we know it gives us great concern.		
11/15/96	E. Bank Jr. High Kanawha County	What happens to those students who cannot master algebra I?		
11/15/96	So. Charleston High Kanawha County	Is there not a need for a consumer or real life math course somewhere?		
11/15/96	Cedar Grove Com. Sch. Kanawha County	Staff as a whole disagreed with algebra I being a requirement for graduation.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL GOALS Adolescent 9-12 (continued)				
11/15/96	Mark C. Fawcett Magnolia High School Wetzel County	There is a concern about staffing and the availability of teachers and courses to meet the increased graduation requirements (arts, foreign language).		
11/15/96	Musselman Middle Sch. Berkeley County	Students who successfully complete this curriculum will not need to attend college.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
PROGRAM CHARTS Core Electives 9-12				
11/13/96	Marilyn Cunningham Box 480 Clendenin, WV 25045	This needs to include FACS courses.		
11/14/96	Rebecca Goodwin Kanawha County	Drama and theater could be combined. Journalism television, film and mass media could be combined. Technical writing must be a required emphasis in English 9-12.		
11/14/96	Joyce Hobbs Berkeley County	There should be no requirement to take AP exams unless funding is provided from a state agency.		
11/13/96	Marilyn Cunningham Box 480 Clendenin, WV 25045	This needs to include FACS courses.		
11/14/96	Marlene Greenleaf Horace Mann Jr. HS Kanawha County	This plan lacks a life management skills class. This plan does not prepare the student to survive beyond "the job."		
11/15/96	Joyce Hobbs Berkeley County	There should be no requirement to take AP exams unless funding is provided from a state agency.		
11/14/96	Charles W. Poole Roane County	We need more focus on the humanities		
11/15/96	Joyce Hobbs Berkeley County	Local school boards should approve electives.		

	Individual/Organization	Comment	Activity/Type	Rationale
		PROGRAM CHARTS Non-Core Electives 9-12		
11/15/96	Patricia Hubbard Jefferson County	Non-core electives should include classes in life skills - current drivers' education is only elective listed in one document. Family and consumer science courses should be listed.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL PRACTICES				
11/13/96	Jay Folden 1106 Hollyberry Lane So. Charleston, WV 25309	This looks like another wish list.		
11/13/96	Stephen Duckworth 205 Maple Avenue New Martinsville, WV 26155	This needs to include a statement addressing absence.		
11/13/96	Margaret Pennington Scarbro Elementary Fayette County	What happened to developmentally appropriate practices?		
11/14/96	Midland Trail Elem. Fayette County	Too detailed, too test driven, and too developmentally inappropriate.		
11/14/96	Janice Kable Jefferson County	Where are the mathematics instructional practices?		
11/14/96	Tammy Chambers	IP.7- using calculators as a tool for mathematical processes is too high level. IP.11 - children at this level do not write essays. IP.12 - not age appropriate.		
11/14/96	Joyce Hobbs Berkeley County	Why is there none for math?		
11/15/96	P. Malone Capital High Kanawha County	These are great, but who will ensure this will occur?		
11/15/96	E. Bank Jr. High Kanawha County	IP.11 - when is math teachers going to get time to incorporate writing into already filled curriculum?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL PRACTICES (continued)				
11/15/96	Cedar Grove Com. Sch. Kanawha County	Acceptable as written.		
11/15/96	Kathy Stout Holz Elementary Kanawha County	Good!		
11/15/96	Carol Green Chandler Elementary Kanawha County	Fine!		
11/15/96	Ann Withrow Point Harmony Kanawha County	IP.2 - I disagree with. IP.11 - not my priority math right now. I.P. 14 - interaction with other adults not my focus at elementary level. IP.22 - requires time.		
11/15/96	Elk Elementary Center Kanawha County	Agree!		
11/15/96	Susan McKay Anita Sivor Belle Elementary Kanawha County	Very worthy goals! Again, impossible to fully achieve as our schools operate now. Real muscle needs to be applied to student discipline.		
11/15/96	Pt. Harmony Elem. Kanawha County	Practices already used in our primary grades.		
11/15/96	B. Miller Dunbar Elementary Kanawha County	Agree!		
11/15/96	Overbrook Elementary Kanawha County	IP.2 - will everyone end up teaching multi-grade classes?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL PRACTICES (continued)				
11/15/96	Michelle Shomo Meranda Bowman Grandview Elementary Kanawha County	Good - I especially like seeing many of the NCTM Standards to be taught.		
11/15/96	Janet Lutz - Alum Creek Sissonville Elementary Kanawha County	I agree!		
11/15/96	Highlawn Elementary Kanawha County	If IP.5 means every student, every lesson, it is absolutely impossible.		
11/15/96	Pinch Elementary Kanawha County	Include very practical suggestions and measurement techniques.		
11/15/96	Alban Elem.Faculty Sen. Kanawha County	Looks good!		
11/15/96	Deborah Rothachen Sardis, OH 43946	Matching instructional methodologies to learning styles is admirable but not realistic. What you're asking for is an IEP for every student.		
11/15/96	Janie Fout 700 Sr. Drive Keyser, WV 26726	Eliminating some of the inappropriate objectives would enhance this.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
DOCUMENT GUIDE				
11/13/96	Margaret Pennington Scarbro Elementary Fayette County	Our instructional objective should have guided the document instead of the Stanford Achievement Test guiding our curriculum.		
11/15/96	Homestead School Randolph County	Good!		
11/15/96	Deborah Rothachen Sardis, OH 43946	The subscripted numerical notations are a great idea.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - English Language Arts				
11/13/96	Sheila Edwards Route 3, Box 108B Washington, WV 26181	Those of gravest concern to me are 12, 24-26, 41, 49, 52		
11/13/96	Miller Elementary Huntington, WV 25701 Cabell County	Developmentally appropriate.		
11/13/96	Katherine Snyder Marlinton Elementary Pocahontas County	I recommend you add a new area "Handwriting" K.43, K.44, K.45, K.46, K.47, K.48, K.50, K.51; Merge writing/ language spelling as one: K.42, K.49, K.52, K.53, K.54, K.55-57 and K.58-59.		
11/13/96	Margaret Pennington Scarbro Elementary Fayette County	I don't think kindergarten children can read literary works by international authors (objective K.14).		
11/13/96	Donna Wood 5 Lynnwood Drive Vienna, WV 26105	The following instructional objectives do not allow for the natural stages of development: K.12, K.24, K.25, K.26, K.41, K.49, K.52, K.54, K.63, and K.64.		
11/13/96	Amy Cigik 1216 Wren Drive New Martinsville, WV 26155	K.14 is unclear - who reads? K.24, 25, 26 - inappropriate. K.28 - not developmentally appropriate. K.31, K.47, K.48, K.49, K.50, K.51, K.52, K.53, K.54, K.58, K.61, K.63, K.70, K.59 - not developmentally appropriate.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - English Language Arts (continued)				
11/14/96	Tammy Chambers	K.15 - students at K level generally listen to most stories. K.24 - not age appropriate. K.34 - this is too many steps for K children. K.38 - too high level. K.47 - printing of both upper and lowercase letters will not be secured for all. K.53 - the five steps for the process of writing is appropriate as a group activity, but not as an individual ability. K.54 - not age appropriate. K.59 - not age appropriate. K.70 - I think CPU disk drive and printer is unnecessary.		
11/15/96	Catherine Marina Box U Holden, WV 25625	My concern is over K.24, K.25, and K.26. Expecting students to recognize blends and digraphs is inappropriate.		
11/15/96	Joyce Hobbs Berkeley County	K.24-26 are not developmentally appropriate.		
11/15/96	Homestead School Randolph County	There is no alphabetical order. Learning consonant blends before vowels concepts of past, present, future is difficult for kindergarten students.		
11/15/96	Albans Elem.Faculty Sen. Kanawha County	Expectations are too high.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - English Language Arts (continued)				
11/15/96	Shepherdstown Elem. (Continued)	K.56 and K.57 - most children at this age level are not ready to tackle these skills.		
11/15/96	Susan Williams 1612 Oak Street Parkersburg, WV 26101	K.24, K.25, K.26 - not appropriate. K.48, K.49 - kindergarten children write on lines only when their coordination allows.		
11/15/96	McKinley Elementary Wood County	K.24, K.25, K.26 - are not taught at the kindergarten level. K.58, K.59 - introduced, but not mastered.		
11/15/96	Shepherdstown Elem. Jefferson County	K.42, K.43 K.45 - developmentally appropriate. K.44, K.46, K.47, K.48, K.49, K.50, K.51, K.52, K.53, K.54 - These objectives would frustrate most children.		
11/15/96	Albans Elem. Faculty Sen. Kanawha County	Expectations are too high.		
11/15/96	Peyton Elem. Faculty Sen. Cabell County	Language - not age appropriate. Reading - not developmentally appropriate. Writing - not appropriate.		
11/15/96	Lawrence Hitt Shepherdstown Elem. Jefferson County	K.44, K.46, K.54 - would be frustrating to most children. K.56, K.57 - are inappropriate.		
11/15/96	Bridge Elementary Faculty Senate Kanawha County	K.24 - these are skills that are not developmentally appropriate.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - English Language Arts (continued)				
11/15/96	Sharon Dawes Elem. Kanawha County	We disagree with the following objectives: 1.4, 1.5, 1.13, 1.18, 1.19, 1.24, 1.21, 1.28, 1.32, 1.33, 1.35, 1.38, 1.44, 1.47, 1.48, 1.54, 1.56, 1.70, 1.72, 1.74, 1.77, 1.84, 1.80, 1.86, 1.87, 1.88, 1.90, 1.94, 1.98, 1.99, 1.101, 1.102, 1.108, 1.109, 1.110 -also with glossary and index, 1.115, 1.116, 1.120.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - Mathematics				
11/13/96	Sheila Edwards Route 3, Box 108B Washington, WV 26181	Those of concern to me are 1, 2, 3, 7, 10 and 11.		
11/13/96	Miller Elementary Huntington, WV 25701 Cabell County	K.2 - too long.		
11/13/96	Donna Wood 5 Lynnwood Drive Vienna, WV 26105	The following objectives are in appropriate for MASTERY: K1, K3, K7, K10, K11, K30, and K36.		
11/13/96	Amy Cigik 1216 Wren Drive New Martinsville, WV 26155	K.22 - not developmentally appropriate. K.26 and K.27 - No. K.36 teachers could demonstrate calculators.		
11/14/96	Rebecca Goodwin Kanawha County	All number theory objectives are based on 10, but K.10 is based on 1-12. I suggest 1-10.		
11/14/96	Midland Trail Elem. Fayette County	A number of these skills are not age appropriate.		
11/14/96	Catherine Marina Box U Holden, WV 25625	Includes too many different objectives. Should be divided into six or seven objectives. K.10 - working with facts to twelve is too abstract. K.11 - It could become confusing to expect learners to use these operations in two-step problems. We have very limited computer software.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - Mathematics (continued)				
11/14/96	Janice Kable Jefferson County	I question whether K.11 and K.19 are developmentally appropriate.		
11/14/96	Tammy Chambers	K.26 - Not age appropriate. K.36 - The use of a calculator is unnecessary in K for actual computations. Computer & Technology need not be repeated over and over.		
11/14/96	Joyce Hobbs Berkeley County	K.11 and K.19 are not developmentally appropriate.		
11/15/96	Homestead School Randolph County	Addition and subtraction to 10 instead of 12.		
11/15/96	Carol Legg Kanawha County	I agree!		
11/15/96	Barbara Thaxton Martha Bailey Dunbar Elementary Kanawha County	We agree with all kindergarten objectives except K.26 - this should be deleted.		
11/15/96	Kathy Stout Holz Elementary Kanawha County	K.10 - add word problems to statement. Under patterns - add *identify a pattern that is not repeating (e.g., A,B,C, 1,3,6,2,4,6). K.21 - add height. K.22 - add height and weight. Add something to indicate writing about math. Either math journals or justification of work.		

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INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - Mathematics (continued)				
11/15/96	Elk Elementary Center Kanawha County	K.10 - should remain totals of six. K.24 - is temperature hot/cold or do they need to read the degrees?		
11/15/96	Belle Elementary Kanawha County	I question if going to sums of 12 is appropriate! It seems appropriate to do addition and subtraction to 10 not 12.		
11/15/96	Lakewood Elementary Kanawha County	Counting 100 objects - too hard. No where does it have recognition of numerals. Pennies and nickels are enough for K students.		
11/15/96	Janet Lutz Alum Creek Elem. Kanawha County	Great!		
11/15/96	Karen Brimhall Highlawn Elementary Randolph County	K.1 - not possible for some immature students. K.3 - too complicated. All appropriate at this level.		
11/15/96	Susan Williams 1612 Oak Street Parkersburg, WV 26101	Counting to 100 is an activity - not a kindergarten goal. A two-step problem is not something to be mastered in kindergarten.		
11/15/96	McKinley Elementary Wood County	K.10, K.10 - introduced, but not at the mastery level.		
11/15/96	Peyton Elem. Faculty Sen. Cabell County	Not appropriate for grade level K.1, K.3, K.11, and K.19.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - Mathematics (continued)				
11/15/96	Lawrence Hitt Shepherdstown Elem. Jefferson County	K.10 - is inappropriate.		
11/15/96	Janie Fout 700 Sr. Drive Keyser, WV 26726	K.11 & K.19 are not appropriate (conservation). K.3 - Why calculators in kindergarten?		
11/15/96	Bridge Elementary Faculty Senate Kanawha County	Our concern is skills that are difficult for first graders.		
11/15/96	Sharon Dawes Elem. Kanawha County	We disagree with the following objectives: 1.1, 1.3, 1.4, 1.7, 1.8, 1.47, 1.48 1.13 disagree w/inverse operations. 1.15 disagree w/"three" digit add and subtraction. 1.27 disagree w/drawing according to number of sides and vertices.		

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INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - Social Studies				
11/13/96	Sheila Edwards Route 3, Box 108B Washington, WV 26181	Those of concern to me are 12 and 15.		
11/13/96	Miller Elementary Huntington, WV 25701 Cabell County	Some goals unreasonably high. Example K6.		
11/13/96	Donna Wood 5 Lynnwood Drive Vienna, WV 26105	The following objectives are inappropriate: K12, K15, and K23.		
11/13/96	Amy Cigik 1216 Wren Drive New Martinsville, WV 26155	K.21 and K.23 - these are developmentally inappropriate.		
11/14/96	Midland Trail Elem. Fayette County	Students of the age five and six do not have the ability to understand many of these concepts.		
11/14/96	Tammy Chambers	K.19 EXACTLY! Students are very egocentric at this age.		
11/15/96	Albans Elem. Faculty Sen. Kanawha County	Not developmentally appropriate.		
11/15/96	Janie Fout 700 Sr. Drive Keyser, WV 26726	K.11 & K.14 are values issues. K.15 & K.19 are abstract.		
11/15/96	Bridge Elementary Faculty Senate Kanawha County	We feel they are adequate.		
11/15/96	Sharon Dawes Elem. Kanawha County	We disagree with 1.31, 1.32.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - Science				
11/13/96	Sheila Edwards Route 3, Box 108B Washington, WV 26181	Those of concern to me are 24, 27 and 66.		
11/13/96	Miller Elementary Huntington, WV 25701 Cabell County	Vocabulary K-29 - too much.		
11/13/96	Donna Wood 5 Lynnwood Drive Vienna, WV 26105	The following objectives are inappropriate: K24, K27, and K66.		
11/13/96	Amy Cigik 1216 Wren Drive New Martinsville, WV 26155	K.8 through K.15 - are not measurable. K-25 - not appropriate. K.27 - omit. K.45 - not appropriate. K.51, K.55, K.56, K.57, K.59 - are not appropriate. K.61, K.66 - not appropriate.		
11/14/96	Rebecca Goodwin Kanawha County	K.26 is too abstract, but the concrete objectives which follow are appropriate		
11/14/96	Midland Trail Elem. Fayette County Schools	Many of these skills are feelings.		
11/14/96	Tammy Chambers	K.8 - K.15 - this needs to be included in the descriptive paragraph above actual objectives. K.12 - they might listen, but you can bet if they do not agree, you will know K.15 - visiting a scientist at work is not always possible. K.26 - omit.		

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INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten -Science (continued)				
11/14/96	Tammy Chambers (continued)	K.27 - I believe it is feasible to have the students understand there are living and nonliving things, but the rest of this objective is a bit much. K.43 - the concept of time is very difficult for a kindergarten student to comprehend. K.50 - this is unrealistic. K.55 - not age appropriate. K.56 - I do not see a purpose of this in kindergarten. K.57 - this could be better stated by saying OBSERVE a model, instead of make. K.59 - this is not appropriate for kindergarten students. K.61 - most biography films are not geared toward five or six year olds. K.66 - not age appropriate. K.74 - define your use of technology.		
11/14/96	Joyce Hobbs Berkeley County	Should be tested if other areas are. Subject objectives should be categorized by "major concepts."		
11/15/96	Homestead School Randolph County	This category has more goals then either reading or math - yet it is a "lesser" subject.		
11/15/96	Susan Williams 1612 Oak Street Parkersburg, WV 26101	It is good to see kindergarten science goals, especially since SB 300 encourages kindergarten to stick to math and language.		

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INSTRUCTIONAL OBJECTIVES - GRADES K-8 Kindergarten - Science (continued)				
11/15/96	Albans Elem. Faculty Sen. Kanawha County	Not developmentally appropriate.		
11/15/96	Lawrence Hitt Shepherdstown Elem. Jefferson County	K.75 - seems to be too much.		
11/15/96	Janie Fout 700 Sr. Drive Keyser, WV 26726	Glad to see affective domain addressed. Some objectives seem redundant.		
11/15/96	Bridge Elementary Faculty Senate Kanawha County	OK		
11/15/96	Sharon Dawes Elem. Kanawha County	We disagree with 1.45 Computer Technology - 1.74, 1.75, 1.80.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - English Language Arts				

11/13/96	Peggy Fillmore Milton Elementary Cabell County	The following items are not developmentally appropriate: 1.21, 1.42, 1.28, 1.25, 1.82, 1.83, 1.102, 1.109, and 1.107.		
11/13/96	Miller Elementary Huntington, WV 25701 Cabell County	Many goals are unrealistic for first graders.		
11/13/96	Katherine Snyder Marlinton Elementary Pochontas County	Do not understand intent of writing/ language/spelling.		
11/14/96	Irene Murphy 711 Sycamore St. Ravenswood, WV 26164	1.104 - expecting first graders to identify nouns, verbs, pronouns, adjectives are too high of an expectation.		
11/14/96	Midland Trail Elem. Fayette County	Reteach daily is not possible or developmentally appropriate. Students should not be penalized by missing art, P.E., etc. in order to reteach.		
11/14/96	Janice Kable Jefferson County	The objectives appear to be age-level appropriate.		
11/15/96	Homestead School Randolph County	Goal 1.24 needs to be in the kindergarten goals.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - English Language Arts (continued)				
11/15/96	Susan Naylor Gihon Elementary Wood County	1.18 - what do you mean by manipulate phonemes? 1.33 - divide words written or oral, how? 1.35 & 1.89 - identify prefixes - too difficult. 1.91 & 1.104 - too advanced. 1.109 - too difficult. If I spend instructional time on these, I have less time to focus on reading skills more essential!		
11/15/96	Brenda Chapman Milton Elementary Cabell County	The following items are not developmentally appropriate for first graders: 1.21 Science fiction, tall tales; 1.28 "R controlled" vowels; 1.35 use prefixes; 1.42 textual reading material; 1.82 spelling with silent consonants; 1.83 spelling irregular verbs; 1.84 spell irregular plural nouns; 1.107 card catalog language arts; 1.109 determine if a word is on a dictionary page when guide words are given; and 1.120 selecting and use appropriate software.		
11/15/96	Andrew Heights Elem. Kanawha County	The standards and expectations are too high.		
11/15/96	McKinley Elementary Wood County	1.94, 1.96, 1.97, 1.99, 1.100, 1.102, 1.109 - are introduced in first grade, but should not be tested items. 1.103 - should be two separate objectives.		

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INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - English Language Arts (continued)				
11/15/96	Lawrence Hitt Shepherdstown Elem. Jefferson County	1.102 - it is tough for our second graders. It will be tougher for first graders.		
11/15/96	Chamberlain Elem. Kanawha County	There are some good objectives. However, there are many that are too advanced or unrealistic for this level. The adopted series do not take the children as far as the goals suggest and most children in today's society developmentally are not. They arrive at school not ready to perform the tasks My concerns are: Listening/Speaking - only the better students have some understanding of the meaning of item 1.7, 1.13, 1.20. 1.21 - is it truly necessary? 1.34 - I doubt they would be mastered. 1.41 - would be difficult for first graders. 1.44 - introduced, but not mastered. 1.47 to 1.52 - does this mean that it will not be studied again? 1.70 - out of reach of most children of this age group. 1.84 to 1.89 - not all children master them by the end of first grade. 1.94, 1.96, 1.98, 1.99, 1.100, 1.101, 1.102, 1.104 - not covered well enough for all students to master the skills and be tested. Study skills - I question whether some of the items can be mastered. Item 1.109 - for advanced first graders.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
		INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - English Language Arts (continued)		
11/15/96	Bridge Elementary Faculty Senate Kanawha County	OK		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - Mathematics				
11/13/96	Peggy Fillmore Brenda Chapman Milton Elementary Cabell County	My opinion is you've taken second grade curriculum and pushed it down. 1.1, 1.4, 1.6, 1.9, 1.13, 1.15, and 1.28.		
11/13/96	Miller Elementary Huntington, WV 25701 Cabell County	It is unrealistic to be able to count to 1,000.		
11/14/96	Midland Trail Elem. Fayette County	Math 1.17 addition.		
11/15/96	Susan Naylor Gihon Elementary Sch. Wood County	1.13 - too hard for six year olds. 1.32 - build or draw? 1.53 - software not available.		
11/15/96	Homestead School Randolph County	Counting to 1,000 seems too high for first graders.		
11/15/96	Lori Wroth Belle Elementary Kanawha County	Whole number operations - I feel that the amount should be 10 instead of 12 because kindergartners are concrete learners, at least if the amount was 10, they could resort to their 10 fingers. Twelve is more abstract and would be difficult to "see."		
11/15/96	Susan McKay Anita Sivor Belle Elementary Kanawha County	Excellent goals! Computer lab or computer aide will be needed to accomplish.		
11/15/96	Overbrook Elementary Kanawha County	Are first graders really expected to count and name numbers to 999?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - Mathematics (continued)				
11/15/96	Anne Bailey Kanawha County	1) Counts by 2's to 100 - unrealistic. 2) Saves and retrieves files on computer is unavailable. 3) Do not have the software to create table and/or bar graph.		
11/15/96	Montrose Elementary Kanawha County	We feel some of the objectives are not consistent with our current math adoption. We don't have software or other materials for computer technology.		
11/15/96	Janet Lutz Alum Creek Elem. Kanawha County	I agree!		
11/15/96	Andrew Heights Elem. Kanawha County	The standards and expectations are too high.		
11/15/96	Persinger Sissonville Elementary Kanawha County	1.1 - disagree, why 999? 1.53 - disagree - where is the software coming from for graphing?		
11/15/96	Lawrence Hitt Shepherdstown Elem. Jefferson County	Why just teach numbers to 1,000? Correct vocabulary, must be used by teachers - grade two.		
11/15/96	Chamberlain Elem. Faculty Senate Kanawha County	1.1 - parts of this item are unrealistic. 1.32 - the actual construction of a figure would be very difficult. 1.37 - the better students generally catch onto this. 1.47 - students can save their work, but it is difficult for them to retrieve a file. 1.53 - this concept is above first grade level.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - Mathematics (continued)				
11/15/96	Bridge Elementary Faculty Senate Kanawha County	1.4 numbers through 200 should be 100.		

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INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - Social Studies				
11/13/96	Paula Meredith Rt. 1, Box 603 Princeton, WV 24746	A study of geography would be excellent.		
11/13/96	Rebecca Goodwin Kanawha County	1.11 "Be in awe and wonderful" - awesome! Wonderful!		
11/15/96	Homestead School Randolph County	Goal 1.10 should also be in the kindergarten level.		
11/15/96	Brenda Chapman Milton Elementary Cabell County	1.17 - major rivers, lakes, mountains. 1.1 - name the president/governor/major.		
11/15/96	Andrew Heights Elem. Kanawha County	The standards and expectations are too high.		
11/15/96	Chamberlain Elem. Faculty Senate Kanawha County	First grader students do not bring enough information with them when they arrive at school for the first grade teacher to help them develop mastery of these skills.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 First Grade - Science				
11/15/96	Homestead School Randolph County	More goals than math for first grade?		
11/15/96	Brenda Chapman Milton Elementary Cabell County	1.11 - be in awe and wonder? 1.63 - lives and discoveries of scientists.		
11/15/96	Andrew Heights Elem. Kanawha County	The standards and expectations are too high.		
11/15/96	Chamberlain Elem. Faculty Senate Kanawha County	Many of the science concepts are not appropriate to grade level. They are too advanced.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - K-8 Second Grade - English Language Arts				
11-13-96	Miller Elementary Cabell County	2.5 - 2.20 - 2.23 - 2.50 - 2.55 - 2.54- 2.100 - 2.105 - 2.42 -- not mentally mature enough to master these.		
11-13-96	Katherine Snyder Marlington Elementary Pocahontas County	Why should a child identify a schwa? Separate writing & handwriting. Should cursive writing be taught in 2nd grade?		
11-14-96	Midland Trail Elementary Kanawha County	There are too many skills introduced and tested that are not developmentally appropriate at each grade level.		
11-14-96	Suzy Shirkey Ashford Rumble Boone County	Where can there be enough time to reach and teach each student on such an extensive proposed program? The objectives are too extensive to actually achieve.		
11/15/96	Mark Osbourn Rt. 5 Box 270 Harpers Ferry, WV 25425	4.99-When will it be installed? 4.94-We are elementary educators, not business teachers/typists!		
11/15/96	McKinley Elementary Wood County	2.27-Our reading program in not "phonics bases". 2.44-letter writing-much time needed, difficulty 2.95- This is very difficult for 2nd graders. 2.102-This is too abstract.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - K-8 Second Grade - English Language Arts (Continued)				
11/15/96	Peytona Elementary Cabell County	2.19-Reading-Students do not grasp irony. 2.23-They do not understand implications of this. 2.73, 2.74-There are no texts to teach cursive.		
11/15/96	Beth Hendrix Williamstown Elementary Wood County	2.3,2.56,2.106-These are introductory and not appropriate for testing at this level.		
11/15/96	Hillsboro Elementary Pocahontas County	2.71 is not consistent with K.51. 2.19(irony),2.73,2.74,2.82,2.84, 2.85,2.86,2.88,2.108-These objectives are not developmentally appropriate for second graders.		
11/15/96	Blue Ridge Elementary Jefferson County	2.9,2.23-These objectives are too difficult. 2.5-This objective is an inappropriate test item. 2.54,2.56-These objectives are inappropriate for testing.		
11/15/96	Sharon Dawes Elementary Kanawha County	2.4,2.14,2.23,2.38,2.48,2.49,2.56,2.73,2.74,2.105,2.115-These objectives are not developmentally appropriate. 2.16,2.24-Everyone does not learn by phonics. 2.96-This is too much to master at this level.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Second Grade - Mathematics				
11/15/96	Terry Sauvageot 312 Oak Tree Lane South Charleston, WV 25309	2.23- This is too difficult for second grade.		
11/15/96	Richard Adkins Boone County Schools	2.5-Evaluate is highest level on Bloom's Taxonomy. This may be asking too much for second graders. 2.79-Are electronic editing strategies going to be provided?		
11-13-96	Miller Elementary Cabell County	2.18 - 2.22 - 2.24 - 2.33- 2.40 -- these math concepts are difficult for the students to grasp / master.		
11-14-96	Suzy Shirkey Ashford Rumble Boone County	Where can there be enough time to reach and teach each student on such an extensive proposed program? The objectives are too extensive to actually achieve.		
11-14-96	Janice Kable Jefferson County Schools	Why just teach numbers to 1,000?		
11-15-96	Oakwood Elementary Kanawha County	I think it is unrealistic for children to count aloud or write their numbers to 1,000. They need only to learn the concept or pattern of numbers.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Second Grade - Mathematics (Continued)				
11/15/96	McKinley Elementary Wood County	2.4-The curriculum does not cover all of it. 2.20-Two-step solution is too difficult. 2.22-Division is not even introduced in 2nd grade. 2.47-Too difficult. 2.48-Too difficult.		
11/15/96	Alban Elementary Kanawha County	Comparing fractions with unlike denominators is too difficult at this grade level.		
11/15/96	Peytona Elementary Cabell County	2.4-County does not supply calculators. 2.16-Cannot model and solve without modeling. 2.22-Need to clarify rotations and reflections.		
11/15/96	Our Lady of Fatima School Cabell County	Current 2nd grade text doesn't count by 3's to 96.		
11/15/96	Nancy Grant Franklin Elementary Pendleton County	2.47-This objective is much too difficult for second graders.		
11/15/96	Sharon Dawes Elementary Kanawha County	2.16,2.22,2.32-These are not developmentally appropriate.		
11/15/96	Terry Sauvageot 312 Oak Tree Lane South Charleston, WV 25309	2.2-Compare and order numbers to 1000 are too difficult.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Second Grade - Social Studies				
11-12-96	Paula H. Meredith Rt. 1 Box 603 Princeton WV 24746	Teaching students at this age about the land, habitats and preventive methods		
11-13-96	Miller Elementary Cabell County	2.1 - 2.2 - 2.5 -- beyond second grade students' comprehension.		
11-14-96	Irene Murphy 711 Sycamore Street Ravenswood WV 26164	2.1 - identifying functions of each governmental body will be hard for this age.		
11-15-96	Joyce Hobbs Berkeley County Schools	Should be tested if other areas are subject objectives should be categorized by 'major concepts'.		
11/15/96	Our Lady of Fatima School Cabell County	Text does not cover bartering.		
11/15/96	Sharon Dawes Elementary Kanawha County	2.27-This is not developmentally appropriate.		
11/15/96	Terry Sauvageot 312 Oak Tree Lane South Charleston, WV 25309	2.1,2.2-These concepts are too abstract for 7 ad 8 year olds.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Second Grade - Science				
11-13-96	Miller Elementary Cabell County	2.10 - 2.13 - 2.14 - 2.16 - 2.25 - 2.26- 2.45 - 2.53 - 2.57 - 2.58 -- too advanced for second grade students.		
11-14-96	Cary L. Parker New Martinsville School Wetzel County	There are too many objectives to be covered in third grade science. We need to concentrate on reading skills.		
11-15-96	Joyce Hobbs Berkeley County Schools	Should be tested if other areas are subject objectives should be categorized by 'major concepts'.		
11/15/96	Sharon Dawes Elementary Kanawha County	2.5-How deep at this level? 2.11-This a bad choice of words. How do you measure this? 2.39-Mastery is not developmentally appropriate.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Third Grade - English Language Arts				
11-13-96	Miller Elementary Cabell County	Reasonable.		
11-13-96	Katherine Snyder Marlinton Elementary Pocahontas County	<i>Ditto on L.A.:</i> Why should a child identify a schwa? Separate writing & handwriting. Should cursive writing be taught in 2nd grade?		
11-14-96	Midland Trail Elementary Kanawha County	Too many higher level thinking skills are introduced and mastery is expected.		
11-14-96	Mrs. Hinte & Mrs. Nelson Rosedale Elementary Fayette County	For some of the objectives (such as 3.82, 3.90 and 3.92) we don't have the resources available in our school.		
11/15/96	McKinley Elementary Wood County	It is not reasonable to expect all children to read on grade level by 4th grade.		
11/15/96	Peytona Elementary Cabell County	3.7-Needs to be included in earlier grades. 3.20-This is not age appropriate. 3.22-Not enough information is given. 3.47-Need more emphasis on correct language.		
11/15/96	Hillsboro Elementary Pocahontas County	3.74-This is not developmentally appropriate for third graders.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Third Grade - Mathematics				
11-13-96	Miller Elementary Cabell County	Algebraic concept too overwhelming. Thinking skills not developed at this age.		
11-14-96	Cary L. Parker New Martinsville School Wetzel County	3.1 - too difficult.		
11-14-96	Mary Toth 828 5th Street New Martinsville WV 26155	3.1 - too high for 8 & 9 year old kids.		
11-14-96	Midland Trail Elementary Kanawha County	There should be more emphasis on learning the very basic skills.		
11-14-96	Mrs. Hinte & Mrs. Nelson Rosedale Elementary Fayette County	3.22 & 3.23 - we don't go into depth on these; 3.26 & 3.27 - we don't cover these; 3.33 - don't do flip, slide & turn; These objectives are usually met on the fourth grade and up.		
11-14-96	Janice Kable Jefferson County Schools	In 3.33, the statement should read translation, reflection and rotation (slide, flip and turn).		
11-15-96	Carol Greene Chandler Elementary Kanawha County	These are things that are already found in the new math series and I always teach those anyway.		
11/15/96	Stacy Patton North Jefferson Elementary Jefferson County	Comparing and ordering fractions with unlike denominators is not developmentally appropriate for 3rd grade.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Third Grade - Mathematics (Continued)				
11/15/96	Alban Elementary Kanawha County	This in not developmentally appropriate!		
11/15/96	Peytona Elementary Cabell County	3.11-This is not age appropriate. 3.12-This is not age appropriate. 3.34-This is not in text or age appropriate.		
11/15/96	Lawrence Hitt Shepherdstown Elementary Jefferson County	3.33-This should read translation, reflection, and rotation (slide, flip, and turn).		
11/15/96	Chamberlain Elementary Kanawha County	The value of estimating by front-end digits is questionable. Multiplying 2 and 3 digit numbers by 3 digit numbers is too difficult for fourth grade students.		
11/15/96	Blue Ridge Elementary Jefferson County	Addition and subtraction skills are assumed to have been mastered when in reality these are still skills being taught and reinforced.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Third Grade - Social Studies				
11-12-96	Paula H. Meredith Rt. 1 Box 603 Princeton WV 24746	Geography lessons should be introduced.		
11-13-96	Miller Elementary Cabell County	Text does not follow objectives.		
11-13-96	Margaret Pennington Scarbro Elementary Fayette County	Many of the tested Civics, Economics & History objectives not now a part of the grade 3 curriculum.		
11-13-96	Mrs. Janet Grimes 100 Simpson Drive Huntington WV 25705	The following sections and/or objectives are developmentally inappropriate: <u>Civics</u>: 3.1, 3.2, 3.3, 3.7, 3.12, 3.14, 3.15, 3.16 and 3.17 <u>Economics</u>: 3.18, 3.23, 3.24 and 3.26 <u>History</u>: 3.39 (depends on difficulty) and 3.26 <u>Study Skills</u>: 3.45 I would hope all teachers would receive teaching guidelines and teaching units from the state in order to be able to teach this curriculum.		
11-14-96	Rebecca Goodwin Kanawha County Schools	3.1, 3.2, 3.15, 3.16 and 3.24 are abstract and are inappropriate for grade 3.		
11-14-96	Irene Murphy 711 Sycamore Street Ravenswood WV 26164	This entire section could be in the fifth grade.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Third Grade - Social Studies (Continued)				
11-14-96	Mary Toth 828 5th Street New Martinsville WV 26155	There are too many objectives to be taught in Science & Social Studies. We need to concentrate on basics, such as reading and math.		
11-14-96	Midland Trail Elementary Kanawha County	Students just do not understand these concepts at this age.		
11-14-96	Mrs. Hinte & Mrs. Nelson Rosedale Elementary Fayette County	Our Social Studies book doesn't meet the objectives for the government section (3.2, 3.3 - 3.7) (3.15 - 3.18)		
11-15-96	Joyce Hobbs Berkeley County Schools	Third grade teacher will end up trying to spend all their time trying to teach all K-2 objectives.		
11/15/96	Evans elementary school Jackson County	Social Studies should not be required to be taught every day at the 3rd grade level (really K-4). This time should not be sacrificed to Social Studies. Most of the Social Studies outcomes are not age appropriate for 3rd graders		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Third Grade - Social Studies (Continued)				
11/15/96	Donna Adkins Geneva Kent Elementary School	I am very concerned about some sections of the Social Studies curriculum goals that have been proposed for 3rd grade. The following sections of the Social Studies goals are NOT developmentally appropriate for third graders. 3.1,3.2,3.3,3.7,3.12,3.14,3.15,3.16,3.17--Civics 3.18,3.23,3.24,3.26--Economics 3.39,3.4--History 3.45--Study Skills		
11/15/96	Karen Dee Stowasser Nancy Murrell Deborah Arbaugh Milton Elementary Cabell County	Our major concern is the over emphasis on memorization of specific social studies facts rather than the development of an understanding of social studies concepts and processes Civics-3.1, 3.2,3.12,3.15,3.16 Economics-3.24 Geography-3.35,3.36 (longitude, latitude, and time zones) History-3.44 These are inappropriate objectives considering the developmental levels of 3rd grade students.		
11/15/96	Stacy Patton North Jefferson Elementary Jefferson County	Many of the objectives seem to be isolated skills.		
11/15/96	McKinley Elementary Wood County	Third grade should be oriented to community in which child lives.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Third Grade - Social Studies (Continued)				
11/15/96	Peytona Elementary Cabell County	3.7,3.15,3.18,3.22,3.24,3.35--This is not age appropriate.		
11/15/96	Chamberlain Elementary Kanawha County	The Goals do not match current textbook adoption. 3.18- This is unrealistic. 3.35-Should not be expected to label all 50 states at this level. Government is too involved and too detailed for this level.		
11/15/96	Our Lady of Fatima School Cabell County	3.3,3.7,3.15,3.17-CurrentMcGraw/Hill text does not cover sections. We need additional programs for computers.		
11/15/96	Hillsboro Elementary Pocahontas County	3.1,3.2,3.15,3.16,3.17,3.18,3.44-These objectives are not developmentally appropriate for third graders.		
11/15/96	Blue Ridge Elementary Jefferson County	These are unrealistic expectations.		
11/15/96	Terry Sauvageot 312 Oak Tree Lane South Charleston, WV 25309	3.18,3.26-The objectives are too difficult for this age level.		
11/15/96	Romney Elementary Hampshire County	The majority of the Social Studies Civics objectives are too abstract for third graders. 3.35-The Geography objectives are appropriate for third grade except this objective.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
		INSTRUCTIONAL OBJECTIVES - GRADES K-8 Third Grade - Social Studies (Continued)		
11/15/96	Marion Dailey Milton Elementary Cabell County	3.1,3.2,3.12,3.15,3.16,3.35,3.36,3.44- There is an overemphasis on memorization in these objectives in Civics, Geography, and History.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Three - Science				
11-13-96	Mrs. Janet Grimes 100 Simpson Drive Huntington WV 25705	The following sections and/or objectives are developmentally inappropriate: 3.33, 3.40, 3.43 and 3.47 (dev. in appropriate). I would hope all teachers would receive teaching guidelines and teaching units from the state in order to be able to teach this curriculum.		
11-14-96	Mary Toth 828 5th Street New Martinsville WV 26155	How do you teach awe and wonder?		
11-14-96	Midland Trail Elementary Kanawha County	A lot of this material could be integrated into units.		
11-14-96	1- Beth Harwick 136 Boston Street Paden City WV 26159 2- Dana Smith 909 James Street New Martinsville WV 26155	How can you teach a child to be in awe?		
11-14-96	Mrs. Hinte & Mrs. Nelson Rosedale Elementary Fayette County	The objectives are too involved for the time limit to teach science. Our current book meets very few of these objectives.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Three - Science (Continued)				
11-15-96	Joyce Hobbs Berkeley County Schools	Third grade teacher will end up trying to spend all their time trying to teach all K-2 objectives.		
11/15/96	Evans elementary school Jackson County	Science should not be required to be taught every day at the 3rd grade level (Really K-4) This time should not be sacrificed to Science. These Science outcomes cover such a broad area that mastery for a 3rd grader of all the outcomes is almost impossible. How do you measure if the student has mastered the Science outcomes? A teacher could teach nothing but Science all day. Technology is great, but K-4 students still need lots of teacher directed instructional time. Local curriculum teams should have the power to set the curriculum.		
11/15/96	Donna Adkins Geneva Kent Elementary School	I am very concerned about some sections of the Science curriculum goals that have been proposed for 3rd grade. The following sections of the Science goals are NOT developmentally appropriate for third graders. 3.33,3.40,3.43,3.47		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Three - Science (Continued)				
11/15/96	Stacy Patton North Jefferson Elementary Jefferson County	The recent textbooks we adopted will help us meet many of the goals and objectives for science. We need money to purchase additional hands-on materials.		
11/15/96	Lawrence Hitt Shepherdstown Elementary Jefferson County	3.1.1-This is very nebulous and hard to measure!		
11/15/96	Chamberlain Elementary Kanawha County	3.7.4, 3.8.2, Study skills -Why test on card catalog when libraries are computerized and don't use them?		
11/15/96	Blue Ridge Elementary Jefferson County	New resources are required to teach these objectives.		
11/15/96	Terry Sauvageot 312 Oak Tree Lane South Charleston, WV 25309	3.1.1-"Be in awe and wonder", how can this be evaluated objectively.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Four - English Language Arts				
11-13-96	Miller Elementary Cabell County	Fine.		
11-13-96	Katherine Snyder Marlinton Elementary Pocahontas County	<i>Ditto on L.A.:</i> Why should a child identify a schwa? Separate writing & handwriting. Should cursive writing be taught in 2nd grade?		
11-14-96	Midland Trail Elementary Kanawha County	There are too many skills introduced and many of them are too advanced.		
11-14-96	Mrs. Williams & Mrs. Hendrickson Rosedale Elementary Fayette County	4.92 - our elementary school does not have access to a library. 'Computer/Technology' trained personnel would be needed to meet these objectives.		
11/15/96	Hillsboro Elementary Pocahontas County	4.92-This objective is inappropriate since card catalogs are all but obsolete.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Four - Mathematics				
11-13-96	Miller Elementary Cabell County	Fine.		
11-14-96	Midland Trail Elementary Kanawha County	There are too many skills introduced for this age level.		
11-14-96	Mrs. Williams & Mrs. Hendrickson Rosedale Elementary Fayette County	Present textbooks do not match all objectives.		
11-14-96	Janice Kable Jefferson County Schools	Objectives appear to be age level appropriate.		
11/15/96	Mark Osbourn Rt. 5 Box 270 Harpers Ferry, WV 25425	4.51-Computer & technology We need more timespent on reading & math skills. 4.56-From where will software come?		
11/15/96	Our Lady of Fatima School Cabell County	Decimals only go to hundreds in text.		
11/15/96	Hillsboro Elementary Pocahontas County	4.20, 4.21, 4.32, 4.33-These objectives are not developmentally appropriate for fourth graders.		
11/15/96	Sharon Dawes Elementary Kanawha County	Level 3 and 4 should not include 2 digit divisors and 3 digit multiplication on level 4.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Four - Social Studies				
11-12-96	Paula H. Meredith Rt. 1 Box 603 Princeton WV 24746	Geography skills can help the students learn state capitals.		
11-13-96	Miller Elementary Cabell County	Too much information.		
11-14-96	Rebecca Goodwin Kanawha County Schools	4.17 & 4.20 are inappropriate for grade 4.		
11-14-96	Midland Trail Elementary Kanawha County	Skills are not age appropriate.		
11-14-96	Dunbar Junior High Kanawha County	Incorporate more geography skills. West Virginia taught K-4 instead of just grade 4.		
11-14-96	Linda Fonner New Martinsville School Wetzel County	Much of 4th grade Civics & History is really from the 5th grade curriculum.		
11-14-96	Mrs. Williams & Mrs. Hendrickson Rosedale Elementary Fayette County	We believe these objectives are written for advanced level students.		
11-15-96	Joyce Hobbs Berkeley County Schools	Social Studies appear overloaded.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Four - Social Studies (Continued)				
11/15/96	Mark Osbourn Rt. 5 Box 270 Harpers Ferry, WV 25425	4.51&4.53-We need more time to teach basics. Perhaps a computer instructor needs to be hired at each site.		
11/15/96	Peytona Elementary Cabell County	4.1,4.48-This is not developmentally appropriate. County materials do not correlate with county goals. We do not have sufficient time, resources or money to expose students to these goals. We feel that they are too far advanced.		
11/15/96	Lawrence Hitt Shepherdstown Elementary Jefferson County	4.37-I'm not sure 4th graders are ready for this. 4.38-Grade 4 is really loaded with broad objectives, and there is too many to cover and do WV History as well.		
11/15/96	Vicki wood Kanawha County Schools	If WV Studies can be integrated throughout the K-4 curriculum, a statement to mat effect should be made before the kindergarten section.		
11/15/96	Our Lady of Fatima School Cabell County	Civics is not covered in either 4th grade textbook.		
11/15/96	Hillsboro Elementary Pocahontas County	4.1,4.7,4.8,4.17,4.19-Civics should be introductory, not tested.		
11/15/96	Blue Ridge Elementary Jefferson County	The "regions" curriculum is not realistic by January.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Four - Social Studies (Continued)				
11/15/96	Terry Sauvageot 312 Oak Tree Lane South Charleston, WV 25309	4.18,4.22-This is too difficult and too abstract.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Four - Science				
11-13-96	Miller Elementary Cabell County	Too much information.		
11-14-96	Midland Trail Elementary Kanawha County	Again, there are too many concepts introduced at this early grade level. Only the basics should be considered at this level of development.		
11-14-96	Mrs. Williams & Mrs. Hendrickson Rosedale Elementary Fayette County	4.17 - 4.68 - these objectives require facilities not available.		
11-15-96	Joyce Hobbs Berkeley County Schools	All science subject objectives need to be categorized to major concepts.		
11-15-96	Mark Osbourn Rt. 5 Box 270 Harpers Ferry, WV 25425	4.78-Time is a large factor in this.		
11/15/96	Our Lady of Fatima School Cabell County	We don't use the CATS program.		
11/15/96	Blue Ridge Elementary Jefferson County	4.11-Is "awe" a measurable outcome?		
11/15/96	Sharon Dawes Elementary Kanawha County	There is no way 25 % of these concepts could be mastered at 4th level. The objectives are too broad and concepts lack focus.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Six - English Language Arts				
11-13-96	Debbie Click 290 Patterson Road Cottageville WV 25239	Some items are too far above grade level & many items are not covered in our adopted text.		
11-13-96	Jolea Martin 4 Scenic Drive Ripley WV 25271	Some items are too far above grade level & many items are not covered in our adopted text.		
11-14-96	Midland Trail Elementary Kanawha County	Spelling objectives are a bit too detailed.		
11-14-96	Patti(?) Haught School Street Ripley WV 2527	The objectives are not age appropriate in several sections. The textbooks do not cover the material listed for several objectives.		
11-14-96	Denita Dale Ripley Middle School Jackson County	Many items are not on their grade level. Some objectives are not covered in textbooks.		
11/15/96	McKinley Elementary Wood County	Funds are needed.		
11/15/96	Blue Ridge Elementary Jefferson County	This has greatly improved over current objectives.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Five - English Language Arts				
11-13-96	Miller Elementary Cabell County	Spell checkers not available. Reference materials are not available. 5.168 & 5.178 - Too advanced. Computer technology materials not available. Quantity of materials too great to obtain proficiency.		
11-14-96	Zenna Hall 804 17th Street Vienna WV 26105	5.18, 5.182, 5.187 - who will teach word processing? We have no computer lab.		
11-14-96	Midland Trail Elementary Kanawha County	We need to provide more time for the basic skills.		
11-14-96	Nita Pettigrew 404 Lombard Drive Williamstown WV 26187	5.167 & 5.169 are the same. Computer skills will not be mastered because students don't have enough time on computers or they aren't working.		
11/15/96	McKinley Elementary Wood County	5.15-Money will be needed to expand classroom libraries for this.		
11/15/96	Chamberlain Elementary Kanawha County	Career Awareness, Technology and Acceleration concerns need more clarification on how career awareness and the application of technology shall be taught in all core programs of study How shall mastery be determined for advancement to next grade level for acceleration? How will we monitor this advancement?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Five - English Language Arts (Continued)				
11/15/96	Our Lady of Fatima School Cabell County	We do not currently teach concrete and abstract nouns.		
11/15/96	Marion Allen Rainelle Elementary Kanawha County	It is unrealistic to believe that all these goals can be accomplished and mastered. Students arrive in fifth grade not ready for most of these skills.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Five - Mathematics				
11-14-96	Midland Trail Elementary Kanawha County	Time is a factor - if all skills are covered.		
11-14-96	Linda Fonner New Martinsville School Wetzel County	5.12 - will calculators be used at all on the Stanford? 5.29 - will protractors & straightedges be needed to take the Stanford 9?		
11-14-96	Nita Pettigrew 404 Lombard Drive Williamstown WV 26187	5.15 - fifth grade math books do not cover millionth's place. After 21 years of teaching, I have never been able to complete a math book to cover all the skills listed.		
11-14-96	Janice Kable Jefferson County Schools	Objectives appear to be age level appropriate.		
11-15-96	Ann Withrow Point Harmony Kanawha County	Be sure that each classroom is equipped with all necessary materials (software, measuring devices, etc.) To meet these objectives.		
11/15/96	McKinley Elementary Wood County	We need money to provide manipulatives for the "hands -on" techniques.		
11/15/96	Our Lady of Fatima School Cabell County	The order of operations is not currently taught.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Five - Social Studies				
11-13-96	Miller Elementary Cabell County	5.5 - 5.7 -- too advanced. Computer/ technology software not available.		
11-14-96	Midland Trail Elementary Kanawha County	Too many skills for one subject.		
11-14-96	1- Beth Harwick 136 Boston Street Paden City WV 26159 2- Dana Smith 909 James Street New Martinsville WV 26155	We don't have time to teach both science and social studies every day.		
11-14-96	Linda Fonner New Martinsville School Wetzel County	History - a lot of the bolded sections are not taught until the end of 5th grade, after the testing.		
11-14-96	Nita Pettigrew 404 Lombard Drive Williamstown WV 26187	It is impossible to cover all of the information in the school year.		
11/15/96	McKinley Elementary Wood County	Additional money needed to provide current world, U.S. state and local maps, globes, encyclopedias or CD Rom.		
11/15/96	Alban Elementary Kanawha County	Effectively teaching language arts, math, social studies and science in not workable, daily!		
11/15/96	Blue Ridge Elementary Jefferson County	These objectives are seemingly unrelated.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Five - Science				
11-13-96	Miller Elementary Cabell County	5.20 - equipment is not available.		
11-14-96	Zenna Hall 804 17th Street Vienna WV 26105	Current McMillan/McGraw Hall series does not include CATS concepts.		
11-14-96	Midland Trail Elementary Kanawha County	Time factor is a concern - needs to be integrated into other area.		
11-14-96	Suzy Shirkey Ashford Rumble Boone County	Requiring 50% of time to be done in research & laboratory skills, this takes materials and extra planning.		
11-14-96	Linda Fonner New Martinsville School Wetzel County	5.19 - How can this be tested in the Stanford test?		
11-14-96	Nita Pettigrew 404 Lombard Drive Williamstown WV 26187	Our science curriculum does not include changes in properties of matter.		
11-15-96	Joyce Hobbs Berkeley County Schools	Technology training must be available. Group subject themes objectives by themes on concepts. Bold face should be removed.		
11/15/96	James Kilbane Harpers Ferry Jr. High Rt. 5 Box 93 Harpers Ferry, WV 25425	Many of the concepts which will be tested are not covered till 9th grade. I believe more time is needed to implement these changes.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Five - Science (Continued)				
11/15/96	McKinley Elementary Wood County	More money from state to implement this "hands-on" activity oriented program.		
11/15/96	Our Lady of Fatima School Cabell County	We cannot continue to reorder science materials.		
11/15/96	Blue Ridge Elementary Jefferson County	This is a lot to cover.		
11/15/96	Terry Sauvageot 312 Oak Tree Lane South Charleston, WV 25309	5.12,5.18-This is too difficult.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Six - Mathematics				
11-14-96	Janice Kable Jefferson County Schools	Objectives appear to be age level appropriate.		
11-15-96	Dunbar Elementary Kanawha County	Software that is mentioned (6.48, 6.55, 6.58 & 6.59) is not available. Information needs to be supplied addressing 6.60 and 6.61.		
11/15/96	McKinley Elementary Wood County	Proper monies need.		
11/15/96	Lawrence Hitt Shepherdstown Elementary Jefferson County	Materials need to be upgraded to support these new objectives.		
11/15/96	Blue Ridge Elementary Jefferson County	This is not enough time to accomplish		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Six - Social Studies				
11/15/96	Chamberlain Elementary Kanawha County	Selected regions of the world is too much. Why didn't we get the documents for each grade level as promised?		
11/15/96	McKinley Elementary Wood County	Money must be provided.		
11/15/96	Blue Ridge Elementary Jefferson County	This is too unrealistic and too much to cover.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Six - Science				
11-14-96	Midland Trail Elementary Kanawha County	Loved objective 6.71! Why can't we integrate Science & Social Studies into everything else.		
11-14-96	Sheila Hammel Ripley Middle School Jackson County	Plant facilities restrict our teaching of all these objectives successfully. Increase budget for consumable items.		
11-14-96	Phyllis Matheny Ripley Middle School Jackson County	Request more budget for consumables.		
11-15-96	Joyce Hobbs Berkeley County Schools	Group subject objectives by themes and/or major concepts. Bold facing should be removed.		
11/15/96	McKinley Elementary Wood County	Need the money to teach these concepts.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Six - English Language Arts				
11-13-96	Debbie Click 290 Patterson Road Cottageville WV 25239	Some items are too far above grade level & many items are not covered in our adopted text.		
11-13-96	Jolea Martin 4 Scenic Drive Ripley WV 25271	Some items are too far above grade level & many items are not covered in our adopted text.		
11-14-96	Midland Trail Elementary Kanawha County	Spelling objectives are a bit too detailed.		
11-14-96	Patti(?) Haught School Street Ripley WV 2527	The objectives are not age appropriate in several sections. The textbooks do not cover the material listed for several objectives.		
11-14-96	Denita Dale Ripley Middle School Jackson County	Many items are not on their grade level. Some objectives are not covered in textbooks.		
11/15/96	McKinley Elementary Wood County	Funds are needed.		
11/15/96	Blue Ridge Elementary Jefferson County	This has greatly improved over current objectives.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Seven - English Language Arts				
11-13-96	Carol Cunningham PO Box 7 Evans WV 25241	Expectations are not reasonable for 7th graders. So many below grade level performance.		
11-15-96	Joyce Hobbs Berkeley County Schools	Research strand should be incorporated here to run through 12th grade.		
11/15/96	Harpers Ferry Jr. High Jefferson County	Goals were realistic. Testing is not realistic.		
11/15/96	Deborah Rothacher 42126 Rothacher Road Sardis, Ohio 43944	7.133-These are referencing skills not study skills!		
11/15/96	Mary Snow Charles Town Jr. High Jefferson County	This is too much too soon!		
11/15/96	Katherine Catozella Charles Town Jr. High Jefferson County	There is no way all the proposed instructional goals could possibly be covered during the course of one school year. Secondly, classrooms are not equipped with computers.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Seven - Mathematics				
11-12-96	Jay Folden 1106 Hollyberry Lane So Charleston WV 25309	The use of calculators should be discouraged.		
11-14-96	Michael Kessinger 100 Crest Avenue Hambleton WV 26269	Many middle schools do not have certified math teachers to teach Algebra I.		
11-14-96	Karen Longwell PO Box 401 Hundred WV 26575	The 'number' of objectives to be mastered are <u>not</u> REALISTIC! Our textbooks no not cover some of the objectives.		
11-14-96	Suzy Shirkey Ashford Rumble Boone County	Requiring all students to take pre-algebra with geometry does not provide for students have trouble with basic math skills.		
11-14-96	Janice Kable Jefferson County Schools	Materials need to be upgraded to support these new objectives. Teachers will need training to implement these objectives.		
11-15-96	DuPont Junior High Kanawha County	Particularly likes the higher expectations for 7th grade.		
11-15-96	Barbara Lockhart Capital High Kanawha County	7.53 - I do not think a graphing calculator should be used to do graphing concepts.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Seven - Mathematics (Continued)				
11-15-96	P. Malone Capital High Kanawha County	This would be fine if the students had actually learned math in the lower grades. Seems like an abundance of material to cover on one year.		
11-15-96	Theresa Ramsey East Bank Jr. High Kanawha County	Unrealistic - won't meet student's needs.		
11-15-96	East Bank Jr. High Kanawha County	Once again, what happens to those students who do not know how to do simple computations such as adding, subtracting, etc.?		
11-15-96	Cedar Grove Community School	Pre Algebra is too difficult for some 7th graders.		
11/15/96	Wirt County Middle School	I am afraid that the math anxiety that children face in today's world will only be heightened. Can the Consumer Math and Business Math classes not benefit the students enough? If students must take time for remediation, their desire to work in class and even stay in school will be adversely affected.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Seven - Mathematics (Continued)				
11/15/96	Our Lady of Fatima School Cabell County	There is not much emphasis on geometry.		
11/15/96	Douglas Perks Jefferson County Schools	Counties should be given the option of offering a pre-Algebra class for 7th grade students who plan to take Algebra I in grade eight. Thus, at grade 7 counties could offer pre-Algebra with Geometry and pre-Algebra. It would be helpful if counties could be given some direction regarding instructional materials available to implement both the grade seven course Pre-Algebra with Geometry and the grade 8 course Pre-Geometry with Algebra.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Seven - Social Studies				
11-13-96	Alice Faye Milhoan 100 Cedar Ridge Drive Ripley WV 25271	It is impossible to have the materials that would cover all concepts adequately. The material is too broad to cover in one year.		
11/15/96	Charles Regan National Geographic Society 1145 17th Street N.W. Washington, D.C. 20036	We are pleased to see the geography strand running throughout the social studies curriculum at all levels. We are particularly excited by the World Geography program of study in the seventh grade.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Seven - Science				
11-14-96	Alan Gandee Ripley Middle School Jackson County	Ripley Middle School needs its own science department budget for delivery of CATS curriculum.		
11-15-96	Joyce Hobbs Berkeley County Schools	Group subject objectives into concepts and/or themes. Removed bold face. Check for spiraling of concept.		
11-15-96	Richard Grimes Charles Town Jr. Jefferson County	I am concerned with the manner these objectives are organized. They do not correlate well with the textbooks. Teachers must supplement materials from sources outside the text. Consider if the goals are met during the total junior high or middle school experience.		
11/15/96	Thomas Wells Charles Town Jr. High 817 High Street Charles Town, WV 25414	Why are we insisting on 50% or more hands-on instruction and assessment, but then turn around and have them take a competency test without hands-on assessment? We need to teach and test similarly.		
11/15/96	Harpers Ferry Jr. High Rt. 5 Box 93 Harpers Ferry, WV 25425	The objectives as stated are enviable, but because of the overwhelming number of them, not all could be accomplished. Given the abbreviated time frame for implementation and the lack of funding and training, the wide-spread use of computers is unrealistic.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Eighth - Science				
11-15-96	Joyce Hobbs Berkeley County Schools	Group subject objectives into concepts and/or themes, Remove bold facing Spiral.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Eight - English Language Arts				
11-14-96	Jane Graham Ripley Middle School Jackson County	8.17, 8.30 and 8.32 are on a level that is higher than 8th grade.		
11-14-96	Pat Pate PO Box 95 Ripley WV 25271	7.99 - example is incorrect.		
11-15-96	Cynthia Staubs Shepherdstown Jr. Jefferson County	It would be impossible to cover properly all of these objectives in a single year. The 'computer/technology' objectives are not obtainable given the lack of computers.		
11/15/96	Judy Hildebrand Charles Town Jr. High Jefferson County	It would be difficult to cover all of these adequately in one class in one year. English classes at our school do not have access to computers.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Eight - Mathematics				
11-14-96	Karen Longwell PO Box 401 Hundred WV 26575	The time of instruction must be increased for the students so they can have 'a chance' to master them.		
11-14-96	Larry Thompson 618 Shady Lane Ripley WV 25271	Present & incoming students will not have the background to successfully complete the mandated objectives for Pre-Geometry with Algebra. Eighth grade students will not have the background skills to be successful on the state adopted test. These objectives cannot be implemented with the current policy of promotion / retention / remediation in elementary and middle level education.		
11-14-96	Rose T. Kessinger PO Box 161 Parsons WV 26287	Higher math, i.e., Algebra I & Geometry are being pushed down to middle schools when most teachers are K-8, not math teachers.		
11-14-96	Janice Kable Jefferson County Schools	Materials need to be upgraded to support these new objectives.		
11-15-96	Barbara Lockhart Capital High Kanawha County	Will each school have enough graphing calculators?		
11-15-96	P. Malone Capital High Kanawha County	An overwhelming amount of materials		
11-15-96	Theresa Ramsey East Bank Jr. High Kanawha County	Unrealistic - won't meet student needs		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Eight - Mathematics (Continued)				
11-15-96	East Bank Jr. High Kanawha County	Where does the funding for manipulatives, computers and software come from?		
11-15-96	South Charleston High Kanawha County	I think these concepts are great. The computer and technology portion is a <u>huge</u> problem. We do not have consistent use of computers.		
11-15-96	John Adams Jr. High Kanawha County	Should be reserved for advanced students only.		
11-15-96	Cedar Grove Community School	The same group of students that did not fair well in Pre Algebra/Geometry will again be discouraged at this level.		
11/15/96	Our Lady of Fatima School Cabell County	We are currently teaching Algebra I to all 8th grade students.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Eight - Social Studies				
11-12-96	Paula H. Meredith Rt. 1 Box 603 Princeton WV 24746	Geography should be taught at this age.		
11-13-96	Melody H. Gaidrich Hedgesville Middle Berkeley County	I Strenuously object to the removal of Civics from the required eighth grade curriculum. There is no required course in democracy at the highschool level.		
11-14-96	Rebecca Goodwin Kanawha County Schools	West Virginia History should only be a semester class.		
11-14-96	Charles Ankrum Ripley Middle School Jackson County	West Virginia Studies or Civics needs to be taught as a four year course. Time is a problem on objectives.		
11-14-96	Ripley Middle School Jackson County	It is impossible to reach most of these goals without West Virginia Studies being a full year course. Don't have time to cover 8.6, 8.8, 8.12, 8.14, 8.22, 8.23, 8.24, 8.27, 8.29, 1.40. Need more time for History 8.53, no time for 8.56 - 8.58, no computers for 8.59 - 8.71 for classroom.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Adolescent Social Studies Education				
11-12-96	William Raney 1301 Laidley Tower Charleston WV 25301	Add to p. 191: "and to be lifelong good citizens of the community" to the current, "the social studies curriculum prepares students for gainful employment, pose secondary education and/or college...", and again, "...for future success in the workplace or in further education..."		
11-14-96	Rebecca Goodwin Kanawha County Schools	The Social Studies goals are well stated. 9-12 is entirely history. This balance needs to be addressed.		
11/15/96	Charles Regan National Geographic Society 1145 17th Street N.W. Washington, D.C. 20036	On behalf of the National Geographic Society I would also like to support a distinct geography elective course for grades 9-12.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Eight - Science				
11-14-96	Elizabeth Ann Casto Ripley Middle School Jackson County	Ripley Middle School needs an increased separate budget. No computers for technology.		
11-15-96	Robert Hobbs Charles Town Jr. High Jefferson County	The curriculum and text don't match objectives.		
11/15/96	Beth Abshire Ripley Middle School Jackson County	We need a science department budget for Ripley Middle School for consumables. We also need training in CATS. It would also be beneficial to have computers in the classroom.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Grade Nine - Science				
11-13-96	Barbara J. Erps Bramwell School Mercer County	Children should be taught both evolution and creationism as a science, then they can make their own decisions.		
11-14-96	Janice Kable Jefferson County Schools	The grade 9 and 10 science curricula appear to spiral objectives according to previous knowledge and level of thinking skills.		
11-15-96	Joyce Hobbs Berkeley County Schools	Remove bold facing. Check subject Thomas Heddlene. The technology goal is an excellent addition to curriculum. Group subject objectives into major concepts.		
11-15-96	Elvin Rose Charles Town Jr. Jefferson County	Many of the objectives are more advanced than the 9th grade level.		
11-15-96	Deborah Shaw Shepherdstown Jr. Jefferson County	9.101 - 9.104 - our school has NO Internet access at this time. No way that I could meet these objectives. Curriculum change without teacher impact.		
11/15/96	James Kilbane Harpers Ferry Jr. High Rt. 5 Box 93 Harpers Ferry, WV 25425	More time is needed. Why don't we give the CATS program a chance to work. More time is needed to access the CATS program. It seems we jump from one thing to another for no reason!		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Nine - English Language Arts				
11-12-96	Rosemarie R. Cox PO Box 303 Shepherdstown WV 25443	Too much material. Too difficult.		
11-12-96	Jennifer P. Koblhepp 185 Tusawilla Hills Charles Town WV 25414	Far too much material to cover adequately in given time period; material too complex for lower level students. I'm denied my freedom to be creative and my individuality.		
11-13-96	Barbara J. Erps Bramwell School Mercer County	Children should be required to write more papers in all classes from 8th grade on. Our schools do not prepare children effectively to feel confident in freshmen level English classes.		
11-15-96	Joyce Hobbs Berkeley County Schools	Technology must be funded.		
11-15-96	Judi S. Fadeley Shepherdstown Jr. Jefferson County	The computer/technology objectives are unrealistic with no or only one computer per classroom.		
11-15-96	Tamata Bittorf Shepherdstown Jr. Jefferson County	9.14, 9.75-9.95 - computers are needed for every classroom for every student.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Nine - English Language Arts (Continued)				
11/15/96	Rebecca DiSaia Harpers Ferry Jr. High Jefferson County	Policy 2520 does not provide schools the appropriate time to adjust the curriculum. Teachers will need to be trained on various levels reaching the objectives, time for reteaching, and the ability to teach and use computer technology. Who will provide the funding for up-to-date computers, computer programs, computer facilities, and computer textbooks? To begin a program badly will doom it to failure.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Ten - Science				
11-14-96	Janice Kable Jefferson County Schools	Bold face of certain items may ensure these items may be taught to the exclusion of those not in boldface. The document would be more 'user friendly' if the subject/themes could be organized by major concepts.		
11/15/96	Bob Phipps Parkersburg South High Wood County	I still would like to ask that Biology be reinstated as a full course in the 10th grade.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Ten - English Language Arts				
11-12-96	Rosemarie R. Cox PO Box 303 Shepherdstown WV 25443	Too much material. Too difficult. No school system has the equipment or the teachers with specialized technological expertise to implement such a program		
11-12-96	Jennifer P. Koblhepp 185 Tusawilla Hills Charles Town WV 25414	Far too much material to cover adequately in given time period. Material too complex for lower level students. I'm denied my freedom to be creative and my individuality.		
11-12-96	Judith Blake Schuda 1236 Park Avenue Charleston WV 25302	Too prescriptive. Unrealistic (10.49; 10.17) without value (10.15)		
11-12-96	Winfield High Putnam County	10.16 - not do-able! Nor is 10.17! 10.49		
11-13-96	Mrs. Gail Woods Rt. 1 Box 1240 Harpers Ferry WV 25425	We do not have the technology available nor the money to purchase it Too much material to cover. Staff does not have adequate training to deal with the technology. The entire program destroys teacher creativity.		
11-14-96	Melba J. Buckland Jefferson High Jefferson County	Equipment, computer programs and other materials unavailable; too much material; insufficient time; too complex; no flexibility or room for creativity.		
11/15/96	Mark Carl Fawcett Network Administrator Magnolia High School	Additional supplemental materials will need to be purchased.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Eleven - English Language Arts				
11-12-96	Rosemarie R. Cox PO Box 303 Shepherdstown WV 25443	Too much material. Too difficult. General student interest lie outside any formal classroom. To ask him to research, analyze and evaluate is unrealistic at best. Objectives suggest teaching to the test, discouragement of innovation & creativity on the part of the teacher.		
11-12-96	Jennifer P. Koblhepp 185 Tusawilla Hills Charles Town WV 25414	Far too much material to cover adequately in given time period; material too complex for lower level students. I'm denied my freedom to be creative and my individuality.		
11-13-96	Mrs. Gail Woods Rt. 1 Box 1240 Harpers Ferry WV 25425	There is no room for flexibility or creativity.		
11-14-96	Melba J. Buckland Jefferson High Jefferson County	Computer technology & material unavailable; training lacking (computers); too much material for too little time.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Grade Twelve - English Language Arts				
11-12-96	Judith Blake Schuda 1236 Park Avenue Charleston WV 25302	1- Much too specific in telling <u>how</u> the goals will be accomplished 2 - Incredible amount of material 3 - 12.59 School <u>is</u> real life. 4 - Do not allow college classes as substitutes for high school English		
11-13-96	Mrs. Gail Woods Rt. 1 Box 1240 Harpers Ferry WV 25425	Need for new books, computers in every classroom. Teacher training, resource materials, time to accomplish all objectives.		
11-14-96	Melba J. Buckland Jefferson High Jefferson County	Computer equipment & materials lacking; computer training needed; too much material to cover in too little time; insufficient dictionaries, thesauruses and supplementary world literature.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Applied Math II				
11-14-96	Rose T. Kessinger PO Box 161 Parsons WV 26287	WVEIS System does not allow you to put in the name of a course, such as Applied Math II and give a different name for the credit - Algebra I.		
11-14-96	Janice Kable Jefferson County Schools	In the introduction omit "...and the determination of competency..."		
11-15-96	Barbara Lockhart Capital High Kanawha County	This course requires a <u>high level</u> of competency.		
11-15-96	P. Malone Capital High Kanawha County	Reading level will be very prohibitive for most students. Need to be better prepared and have a more positive attitude toward the course.		
11-15-96	East Bank Jr. High Kanawha County	Reading skills of students should be evaluated before they take this class. Low reading levels will not matter in class.		
11-15-96	South Charleston High Kanawha County	We are concerned about the low ability student.		
11-15-96	Linda L. Adkins Herbert Hoover High Kanawha County	This is an excellent course.		
11-15-96	Cedar Grove Community School	Agree, however hardware is limited.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Applied Math I				
11-14-96	Elizabeth Dean Wetzel County Schools	All 9th grade students who are not enrolling in Algebra or Geometry will be in Applied Math I. These students will most likely have a reading level below 8th grade. Teachers have stated that most 9th grade students are not mature enough to take Applied Math I. There is a need for a math course for those student entering highschool who are below grade level in reading and math. Applied Math I & Applied Math II are not equivalent to Algebra I. A student should be required to pass a proficiency exam.		
11-14-96	Rose T. Kessinger PO Box 161 Parsons WV 26287	Colleges are not recognizing applied programs for Algebra and/or Geometry credit.		
11-14-96	Janice Kable Jefferson County Schools	The demonstration of competency... am 1.16 'perform' not PREFORM!		
11-15-96	P. Malone Capital High Kanawha County	Reading level will be very prohibitive for most students. Need to be better prepared and have a more positive attitude toward the course.		
11-15-96	East Bank Jr. High Kanawha County	Reading skills of students should be evaluated before they take this class. Low reading levels will not matter in class.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Applied Math I (Continued)				
11-15-96	Linda L. Adkins Herbert Hoover High Kanawha County	This is an excellent course.		
11-15-96	Cedar Grove Community School	Agree, however, many schools are not equipped with appropriate hardware (graphing calculators and computers).		
11/15/96	David Kennedy 16 Lincoln Way Buckhannon, WV 26201	Where is the funding for computers in the high schools?! This looks like an unfunded mandate!		
11/15/96	Barbara Cox Braxton County Schools Sutton, WV 26601	I think the goals and objectives have been well done. I feel we have scaled up the expectations for high school math to the point that we will find that will be a small percentage of students who are just beyond the scope of special education, yet do not have the academic ability to meet the proposed expectations. Educators should understand the futility of making expectations which exceed ability. I guess I am simply saying that we need to have in place an alternative program for the few who just cannot make it.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES K-8 Applied Math I (Continued)				
11/15/96	Douglas Perks Jefferson County Schools	If a student takes Applied Math I and II, Applied Geometry will this count as the graduation requirement of three units of mathematics? It would be beneficial if the WVDE would mandate alternative scheduling. This would provide flexibility necessary for meeting the varied academic needs of students.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES- GRADES 9-12 Mathematics - Algebra I				
11-14-96	Michael Kessinger 100 Crest Avenue Hambleton WV 26269	Math courses should be phased in instead of requiring Algebra I, II and above.		
11-14-96	Deloris Lipps Wirt County High Wiry County	An Algebra I end-of-course exam was recommended by the committee which prepared the mathematics goals and objectives. The purpose was to guarantee the courses (Algebra I, Applied Mathematics I & II) were not 'watered down' to accommodate the students taking the courses. I have already been told by math teachers that not only Algebra I, but Geometry and Algebra II would have to be 'watered down' to meet the abilities of the students. Without a state mandated exam to prevent this, many teachers will be pressured to do just that. I feel very strongly that this exam is needed. Please do not eliminate it.		
11-14-96	Rose T. Kessinger PO Box 161 Parsons WV 26287	The requirement of both Algebra I & a higher math for graduation is too much too fast. Start with Algebra I requirement <u>only</u> .		
11-14-96	Judith A. Shade Rt. 2 Box 307 Inwood WV 25428	To require these 'at risk' students to have an Algebra I credit in order to graduate in an unrealistic goal.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES- GRADES 9-12 Mathematics - Algebra I (Continued)				
11-15-96	Mrs. Patricia Egbert Wirt County Middle Wirt County	Algebra I & Geometry plus an additional mathematics course. However, I am afraid that the math anxiety that children face in today's world will only be heightened by forcing academic work upon them which they may not be ready to attempt. If students must take time for remediation, I am concerned that when students get off track due to remedial activities. While these goals are outstanding...		
11-15-96	DuPont Junior High Kanawha County	Particularly like the higher expectations for Algebra I.		
11-15-96	Barbara Lockhart Capital High Kanawha County	The exit exam for Algebra I is of concern. It sounds to me like one big headache if all students are required to take Algebra I to graduate. I wish we had students capable of all this.		
11-15-96	P. Malone Capital High Kanawha County	OK, but I don't feel a high school student could successfully complete all objectives presented.		
11-15-96	Theresa Ramsey East Bank Jr. High Kanawha County	All students should not be required to take this class. No exit exam - save that for AP classes.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES- GRADES 9-12 Mathematics - Algebra I (Continued)				
11-15-96	South Charleston High Kanawha County	What does this do to our successful program of Alg IA/Alg IB?		
11-15-96	South Charleston Jr. Kanawha County	Need an Algebra I exit exam if every student must take the course.		
11-15-96	South Charleston High Kanawha County	If they are requiring <u>every</u> student to take this course, there must be an exit exam given in order for us to see that these requirements have been met.		
11-15-96	John Adams Jr. High Kanawha County	How are will Algebra I be 'watered down' so that all students can pass?		
11-15-96	Cedar Grove Community School	Agree. Exit exam is a wonderful idea. A policy that should be considered for all courses required for graduation.		
11/15/96	Sandra Gruber Jefferson High School	What scares me even more is that even if I can get a student through a minimal Algebra I course, he/she must then pass Algebra II and Geometry to graduate. This is an impossibility! Other factors that need to be addressed at this time involve money and staffing.		
11-15-96	Dan Gardner HC 75 Box 184B New Creek, WV 26743	The idea of an exit exam after completion of Algebra I and the second year of Applied Math is most appropriate. It would help provide some data on the equity of course content between the two programs of study. It may identify students who need some follow-up instruction for reinforcing the skills learned.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES- GRADES 9-12 Mathematics - Algebra I (Continued)				
11-15-96	East Bank Jr. High Kanawha County	Not all students will be able to take Algebra I. What happens to math credits when a student has to take the support class, who will teach these classes? Maybe students should take a test to get into Algebra I and take an exit exam to get out. I still believe that requiring all students to take Algebra I will be setting many up to fail. I definitely do <u>not</u> agree to this at all!		

Date Received	Individuals/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Mathematics - Algebra II				
11-15-96	Barbara Lockhart Capital High Kanawha County	We need graphing calculators and overhead units.		
11-15-96	P. Malone Capital High Kanawha County	Must pass an exit exam in Algebra I to continue to this course!! Algebra I must be mastered in order to cover all objectives.		
11-15-96	South Charleston High Kanawha County	Will the weak students succeed? Is this really meeting their needs? Are we 'dumbing' down this class also?		
11-15-96	Cedar Grove Community School	Agree.		
11/15/96	Patricia Martin Frankfort High School Mineral County	A2.19-This includes a statement that emphasizes problem solving and critical thinking skills are to be applied to each Instructional Goal and Objective. A2.1, A2.18-MacNumerics is a computer software tool for use in Algebra II.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Mathematics - Algebra/Geometry Preparation				
11-12-96	Jay Folden 1106 Hollyberry Lane So Charleston WV 25309	One of the best places to apply geometry is in your drafting classes and technology classes. This new curriculum may cause these types of programs to be eliminated from many schools.		
11-15-96	Barbara Lockhart Capital High Kanawha County	I think the calculator descriptions are too specific.		
11-15-96	P. Malone Capital High Kanawha County	I feel students should get credit for a math course.		
11-15-96	Theresa Ramsey East Bank Jr. High Kanawha County	Will additional teachers be hired? If these are non-credit, will they be required?		
11-15-96	Cedar Grove Community School	Agree.		
11/15/96	Patricia Martin Frankfort High School Mineral County	G.5-Perhaps the "and" could read "and/or" thus allowing for the study of logic to include the use of the definitions but not the writing of formal proof. G.17-Currently in the Applied I & II curriculum but not in Applied Geometry. G.18-Not currently a part of the course. G.20-Not currently a part of Applied Geometry.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Mathematics - Trigonometry				
11-15-96	Cedar Grove Community School	Agree.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
		INSTRUCTIONAL OBJECTIVES Probability & Statistics		
11-15-96	Cedar Grove Community School	Agree.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES				
Precalculus				
11-15-96	Cedar Grove Community School	Agree.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 U.S. Studies 1900				
11-12-96	Winfield High Putnam County	Objectives for Economics & History need to be reworked.		
11-12-96	Winfield High Putnam County	Are there to be special books for the Civics goals for 9th grade? Economics? Geography? Freshmen to not have skills or insight let alone writing skills to analyze the Constitution.		
11-12-96	Winfield High Putnam County	Computer/Technology 9.51 to 9.57, 9th graders receive basic keyboarding. Not enough time to do all of these "neat" computer things with 9th graders who don't know how to use a keyboard.		
11-12-96	Winfield High Putnam County	9.10 - 9.11 - this is not needed for 9th graders. 9.34 - no time for this 9.23 - do this in 11th grade - 20th Century 9.49 - why?		
11-12-96	Winfield High Putnam County	Goals are well written - covers material to be taught.		
11-14-96	Concord College Athens WV 24712-1000	I support an elective geography course. Students have very few elective social studies classes.		
11-14-96	Kathleen Lohmann Morgantown High Monongalia County	The order of courses does not seem logical and lacks continuity. There would be no continuity between this, World Studies to 1900 and Twentieth Century Studies.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 U.S. Studies 1900 (Continued)				
11-14-96	Stephen Bradley Morgantown High Monongalia County	The curriculum was set up to teach History in chronological order from the beginning of time to the present... This curriculum has proved itself to be the ideal setup and in my opinion should be left intact. Students understand history concepts if they are taught in chronological order in a consistent manner. I also have concerns about the Review for Assessment. Jumping around to different subjects that don't pertain to the concepts dealing with American History will be at the least confusing for students. Morgantown High has developed a special class called Linking the Humanities. It combines English and Social Studies class. This flip flop of 9th and 10th grade curriculum will destroy a very successful program.		
11-14-96	David Chaplin Morgantown High Monongalia County	Chronology is the key to a successful curriculum.		
11-14-96	James A. Field Morgantown High Monongalia County	This course needs to be taught back to back with the 20th Century, either 9-10 or 10-11.		
11-14-96	Mary Ann Galloway Warwood Middle Ohio County	Need for Geography elector on the high school level. Need an expanded list of electives a county can choose from for high school Social Studies ex course on the Holocaust, Sociology, etc.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 U.S. Studies 1900 (Continued)				
11-15-96	Tim Snead Glenwood Junior High Mercer County	I think this should be covered in the 10th grade, not the 9th.		
11-15-96	Joyce Hobbs Berkeley County Schools	Technology must be state funded and curriculum should be phased in.		
11/15/96	Melody Gaidrich Hedgesville Middle School	Upon an examination of the goals and testing areas of the testing instrument, it becomes obvious that fully one-fourth of the test deals with complexities and situations unique to American History. I fail to understand why goals and objectives conducive to the learning needed for the standardized test were not more fully developed for these proposed courses.		
11/15/96	Lillian Shewbridge PikeView High School Mercer County	Should be taught in the 10th grade.		
11/15/96	Teresa Vaught Farley Paul Hodges PikeView High School Mercer County	Why change it? It works. US Studies to 1900 and World Studies to 1900 need to be reversed.		
11/15/96	Vicki wood Kanawha County Schools	If implemented in 1997-1998, make provision for the availability of a textbook that will be on the state multiple list. Otherwise, counties will have to invest thousands of dollars for a text that can be used only one year.		

Date Returned	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 World Studies to 1900				
11-12-96	Winfield High Putnam County	Assessments in some cases bare little relationship to objectives. Should be a two term course.		
11-12-96	Winfield High Putnam County	Geography & Economics classes should be required, not an elective.		
11-12-96	Winfield High Putnam County	9.56 - Who's going to teach me?		
11-12-96	Winfield High Putnam County	Goals are well written - covers material to be taught.		
11-14-96	Rebecca J. Moore 120 South 1st Avenue Paden City WV 26159	Many of the objectives set for the course do not align with the curriculum or course content.		
11-14-96	Concord College Athens WV 24712-1000	I support an elective geography course. Students have very few elective social studies classes.		
11-14-96	Rebecca Goodwin Kanawha County Schools	Changing the sequence of courses will present textbook problems.		
11-14-96	David Chaplin Morgantown High Monongalia County	I believe that it makes more sense to keep the present curriculum.		
11-15-96	Tim Snead Glenwood Junior High Mercer County	Too much material to cover in one year.		

Date Returned	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 World Studies to 1900 (Continued)				
11-14-96	Stephen Bradley Morgantown High Monongalia County	The curriculum was set up to teach History in chronological order from the beginning of time to the present... This curriculum has proved itself to be the ideal setup and in my opinion should be left intact. Students understand history concepts if they are taught in chronological order in a consistent manner. I also have concerns about the Review for Assessment. Jumping around to different subjects that don't pertain to the concepts dealing with American History will be at the least confusing for students. Morgantown High has developed a special class called Linking the Humanities. It combines English and Social Studies class. This flip flop of 9th and 10th grade curriculum will destroy a very successful program.		
11-15-96	Paul Hodges Pike View High Mercer County	US Studies to 1900 and World Studies to 1900 need to be reversed.		

Date Returned	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 World Studies to 1900 (Continued)				
11/15/96	Wayne Pelts PikeView High School Mercer County	Changing the sequencing of our required courses makes no sense to me. Is it true that our curriculum was rewritten to go along with the required S.A.T. test? Why is American History Parts I and II would not be taught together? Why would tenth grade World History interrupt this sequence? Covering four more centuries is not possible. Why has World History and American History been combined for the tenth grade? These are two very distinct courses. Have the test questions on the S.A.T. determined what our L.O.s should be, even if it is not part of the curriculum? Now for another area of concern, the elective proposal--our students love our "street law" & also appreciate psychology. Your proposal would eliminate these great courses from our curriculum. Why mandate economics as the preferred elective? How sad it will be in our school if our successful electives are no longer offered.		
11/15/96	Mark Carl Fawcett Jane Higginbotham Network Administrator Magnolia High School	The problem with this is many of the objectives set for the course do not align with the curriculum or course content.		

Date Returned	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 World Studies to 1900 (Continued)				
11/15/96	Kenneth Monk Pike View High School Mercer County	If we reverse the teaching order of World Studies to 1900 with U.S. Studies to 1900, we will create a major scheduling conflict. It is very difficult in World Studies to meet the time frame and learner outcomes. Our proposed overlapping learner outcomes lead me to believe that we are trying to teach to a test rather than help students achieve a very fundamental social studies backgrounds. I presently do not feel that the West Virginia State Department of Education should require that certain electives be taught.		
11/15/96	Lillian Shewbridge Pike View High School Mercer County	The course is out of sequence. Should cover only up to 1600. In my experience, time does not allow for adequate coverage of world events past 1600. Lessen the American Government learner outcomes.		
11/15/96	Teresa Vaught Farley Pike View High School Mercer County	It is impossible to cover the curriculum as it is.		
11/15/96	Phoebe Meadows Pike View High School Mercer County	How can you add 400 years to what is presently impossible to cover in one year? This course needs to be divided into 2 courses.		

Date Returned	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 World Studies to 1900 (Continued)				
11/15/96	Betsy Sagady Pike View High School Mercer County	This proposed curriculum tries to cover too many different segments of social studies for this age group.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Twentieth Century Studies				
11-12-96	Winfield High Putnam County	Very decent objectives in Civics & Economics. Assessments do not relate to their objectives.		
11-12-96	Winfield High Putnam County	Too much Civics, Economics & Geography. Too much detail. Too little stress on history! 11.56 - why is this there?		
11-12-96	Winfield High Putnam County	Goals are well written - covers material to be taught.		
11-14-96	Concord College Athens WV 24712-1000	I support an elective geography course. Students have very few elective social studies classes.		
11-15-96	Paul Hodges Pike View High Mercer County	I object to the concept of 20th Century Studies instead of U.S. History or U.S. and the World.		
11-15-96	Tim Sneed Glenwood Junior High Mercer County	Should be covered in 11th grade.		
11/15/96	Lillian Shewbridge PikeView High School Mercer County	Should sequentially follow 10th grade U.S. Studies to 1900. Sequentially and logically, United States Studies to 1900 should lead into Twentieth Century Studies without a disruptive interval of one year between the two courses dealing with American Studies.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Twentieth Century Studies (Continued)				
11/15/96	Teresa Vaught Farley Pike View High School Mercer County	Maybe we could have 4 Social Studies requirements. Two World and US, and make law/psychology and economics/civics a 5th elective. Let students choose.		
11/15/96	Phoebe Meadows Pike View High School Mercer County	There should be 4 credits required for graduation in Social Studies.		
11/15/96	Betsy Sagady Pike View High School Mercer County	As it is now with the present curriculum, we must choose the most important areas to teach.		
11/15/96	Vicki wood Kanawha County Schools	If the curriculum is to be implemented entirely during the 1997/1998 school year, permit students who have already started a social studies sequence to continue in their pathway. Otherwise, the curriculum will be fragmented and two levels of students will have the same course next school year, entailing another cost in textbook purchase for one year.		
11/15/96	Stephanie Mendelson P.O. Box 249 Lewisburg, WV 24901	Social Studies should knowledgeable about resources in the community.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Economics				
11-14-96	Lloyd P. Calvert, Sr VP One Valley Bank One Valley Square Charleston WV 25326	I urge you to help our high school students to become more competitive in our complex economic world. Please restore the Economics requirement to the state social studies curriculum and provide the funds authorized by SB 300 to train our teachers to deliver this information.		
11-14-96	Judy Thomas, Pres. The Ashland Foundation PO Box 391 Ashland KY 41114	I urge you to require a high school economics course in the new state social studies curriculum.		
11-15-96	Paul Hodges Pike View High Mercer County	Most high school students see these courses as deadly boring. Classes such as psychology and law are widely chosen by our students.		
11-15-96	Tim Snead Glenwood Junior High Mercer County	I think Economics as a required class is a good idea.		
11/15/96	Judy Thomas Ashland Inc. Foundation Ashland, KY	There needs to be a required high school economics course.		
11/15/96	David P. Reed Lloyd P. Calvert Executive & Senior Vice Presidents One Valley Bank Huntington, WV 25779	The State Board of Education should require high school students to take a course in Economics.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Economics (Continued)				
11/15/96	Susan V. Fleming President Junior Achievement of the Ohio Valley, Inc. Ashland, KY 41105	The State Board of Education should require high school students to take a course in Economics.		
11/15/96	Phoebe Meadows PikeView High School Mercer County	This could be 1/2 or a course which should include civics/government. Then law/psychology should be the other 1 credit electives course offering for Social Studies..		
11/15/96	Vicki wood Kanawha County Schools	Make this course a "recommended elective" not a "required to be taught."		
11/15/96	James H. Morgan Stadium Bookstore 1949 Fifth Avenue Huntington, WV 25703	We need a high school economics course in the new state social studies curriculum.		
11/15/96	Romney Elementary Hampshire County	The Economics objectives are too abstract for third grade.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Economics (Continued)				
11/15/96	Susan V. Fleming President Junior Achievement of the Ohio Valley, Inc. Ashland, KY 41105	The State Board of Education should require high school students to take a course in Economics.		
11/15/96	Phoebe Meadows PikeView High School Mercer County	This could be 1/2 or a course which should include civics/government. Then law/psychology should be the other 1 credit electives course offering for Social Studies..		
11/15/96	Vicki wood Kanawha County Schools	Make this course a "recommended elective" not a "required to be taught".		
11/15/96	James H. Morgan Stadium Bookstore 1949 Fifth Avenue Huntington, WV 25703	We need a high school economics course in the new state social studies curriculum.		
11/15/96	Romney Elementary Hampshire County	The Economics objectives are too abstract for third grade.		

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INSTRUCTIONAL OBJECTIVES - GRADES 9-12 Civics/Government				
11-12-96	Paula H. Meredith Rt. 1 Box 603 Princeton WV 24746	Need a geography course to be offered.		
11-14-96	Rebecca Goodwin Kanawha County Schools	This course should be required. The balance is too heavily weighed toward history.		
11-14-96	Mary Ann Gallaway Warwood Middle Ohio County	Need a lot of government course.		
11-15-96	Tim Sneed Glenwood Junior High Mercer County	Should be a required class.		
11/15/96	Phoebe Meadows Pike View High School Mercer County	Neither should be a pre-requisite college bound students take these courses.		
11/15/96	Betsy Sagady Pike View High School Mercer County	These areas are usually covered in earlier courses.		
11/15/96	Vicki wood Kanawha County Schools	Make this course a "recommended elective" not a "required to be taught".		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Human Anatomy and Physiology				
11-12-96	Jay Folden 1106 Hollyberry Lane So Charleston WV 25309	Should be offered only as a college credit course.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-4. Summary of the Instructional Goals and Objectives				
11-13-96	Lynn McEldowney R.Ph. 414 Pennsylvania Ave. Nutter Fort WV 26301-4522	[add] an to be lifelong good citizens of the community.		
11-13-96	Sheila Edwards Rt. 3 Box 108B Washington WV 26181	Kindergarten Goals & Objectives need to be revised by a panel consisting of certified, practicing kindergarten teachers. Many of the objectives are inappropriate for kindergarten.		
11-13-96	Cheryl McCallister Calhoun-Gilmer Career Center Calhoun County	I am greatly concerned with how should keyboarding skills be taught and by whom.		
11-12-96	Rosemarie R. Cox PO Box 303 Shepherdstown WV 25443	Does not address strategies for teaching the basics in the lower grades		
11-14-96	Rebecca J. Moore 120 South 1st Avenue Paden City WV 26159	There is a concern about staffing and the availability of teachers and courses to meet the increased graduation requirements. For example: Arts, Foreign Language. Textbooks which do not cover many of the objectives.		
11-14-96	Rebecca Goodwin Kanawha County Schools	The Department is to be commended for the work on these objectives.		
11-13-96	Mrs. Gail Woods Rt. 1 Box 1240 Harpers Ferry WV 25425	The program as outlined it totally unrealistic.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-4. Summary of the Instructional Goals and Objectives (Continued)				
11-14-96	Irene Murphy 711 Sycamore Street Ravenswood WV 26164	There are too many goals and objectives in science at the K-5 level. I believe in high expectations, but I am afraid that this document is setting children up for failure.		
11-12-96	Jay Folden 1106 Hollyberry Lane So Charleston WV 25309	Goals are to [sic] high, student drop-out rate will increase. <u>Math Requirement</u> : Will never work because of special education and vocational education students. Applied math I & II substitutes for Algebra I. Do you really believe that this is equal? <u>Physical Education & Health</u> could be a combined course including both areas. I see a lack of requirement for technical education courses. <u>Non-Core Electives</u> I see a learning for to [sic] much arts. The majority of the students will never accept the arts.		
11-14-96	Midland Trail Elementary Kanawha County	These goals and objectives need to be seriously reviewed in detail before they are adopted.		
11-14-96	Ashford Rumble Elem Boone County	Overwhelming!		
11-14-96	WV Association for Young Children 929 Stewart Street Morgantown WV 26505	Goals & Objectives need to be revised by a panel of experts in child development.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-4. Summary of the Instructional Goals and Objectives (Continued)				
11-14-96	Brenda Stephens Mineral Wells School Wood County	Some objectives are not appropriate for kindergarten students. Some examples follow on p. 3		
11-14-96	Janice Kable Jefferson County Schools	At best, the policy looks like a series of science test questions for teacher to teach so that they do not elicit wrath from their superiors!		
11-14-96	Melba J. Buckland Jefferson High Jefferson County	Entirely too much material to be covered each year; materials and training needed to accomplish objectives.		
11-15-96	Joyce Chapman Winchester Ave School Berkeley County	Funding for software, where's it coming from?		
11-15-96	DuPont Junior High Kanawha County	We are excited about the future of math education. We wonder about funding for the needed technology and need training necessary to incorporate the new strategies used.		
11/15/96	McKinley Elementary Wood County	K.24, K.26, K.25 Reading Comprehension goals are extremely developmentally inappropriate.		
11/15/96	Lawrence Hitt Shepherdstown Elementary Jefferson County	We will need to realign the curriculum and materials. It appears to me that many objectives have been moved down one grade level.		
11/15/96	Harpers Ferry Jr. High Jefferson County	The Goals and Objectives need to be reached before testing. Move testing to end of the year.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
§126-44-4. Summary of the Instructional Goals and Objectives (Continued)				
11/15/96	Katherine Catozella Charles Town Jr. High Jefferson County	These are not realistic given time and budgeting restraints. Too much to cover and no computer assistance.		
11/15/96	Richard Adkins Boone County Schools	Overwhelming! I am amazed that all this is expected to come about with no cost to local schools or county boards.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Discrete Mathematics				
11-12-96	Jay Folden 1106 Hollyberry Lane So Charleston WV 25309	I have no idea that this is.		
11-15-96	South Charleston High Kanawha County	Aren't these goals/objectives too specific?		
11-15-96	Cedar Grove Community School	Agree.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Algebra/Geometry Preparation				
11-12-96	Jay Folden 1106 Hollyberry Lane So Charleston WV 25309	This should be a 7-8 grade course, not on the 9-12 level.		
11-15-96	South Charleston High Kanawha County	Will this be taught on the high school level?		
11/15/96	David Kennedy 16 Lincoln Way Buckhannon, WV 26201	Isn't this General Math 9 re-named?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Geometry / Applied Geometry				
11-15-96	Barbara Lockhart Capital High Kanawha County	I think regular Geometry course do what's described in the Applied Geometry course.		
11-15-96	P. Malone Capital High Kanawha County	Where is the technology to come from?		
11-15-96	East Bank Jr. High Kanawha County	Will all schools have equal amounts of money for manipulatives?		
11-15-96	South Charleston High Kanawha County	Where will the equipment come from?		
11-15-96	John Adams Jr. High Kanawha County	Should be a division between Honors Geometry (with proofs) and regular Geometry (without proofs).		
11-15-96	Cedar Grove Community School	Agree.		
11/15/96	David Kennedy 16 Lincoln Way Buckhannon, WV 26201	Again, computers are crucial for geometry teaching today, but lacking in most classrooms.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES AP Courses				
11-12-96	Jay Folden 1106 Hollyberry Lane So Charleston WV 25309	Do away with AP classes and have all students take the college credit classes or do away with the college classes and have AP courses.		
11/15/96	David Kennedy 16 Lincoln Way Buckhannon, WV 26201	Could AP statistics be fleshed out more?		
11/15/96	John Paull Hogg 116 Sunny Drive Barboursville, WV 25504	Having American History in the ninth grade will virtually eliminate the possibility of having an AP American History course in the junior year.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Algebra Support				
11-12-96	Jay Folden 1106 Hollyberry Lane So Charleston WV 25309	Another watered down math dass that should be on the 6-8 levels.		
11-15-96	Joyce Hobbs Berkeley County Schools	I find this repulsive! NO end of the year exam! This smacks of state control and domination!		
11-15-96	Barbara Lockhart Capital High Kanawha County	How is this class to be taught if students are at different competency levels? What kind of credit do they get for this class?		
11-15-96	P. Malone Capital High Kanawha County	Good idea, what does the student take at the end of the semester? Again, needs to received math credit.		
11-15-96	Theresa Ramsey East Bank Jr. High Kanawha County	Will additional teachers be hired? If these are non-credit, will they be required?		
11-15-96	South Charleston High Kanawha County	This is a good idea, but what will we staff it?		
11-15-96	South Charleston High Kanawha County	If they are capable of moving on to Geometry from this course, then they should receive Algebra <u>credit</u> if they can show success on the exit exam!		
11-15-96	John Adams Jr. High Kanawha County	What about Algebra I over two years, i.e., algebra IA and IB?		
11-15-96	Cedar Grove Community School	Agree.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Algebra Support (Continued)				
11/15/96	Patricia Martin Frankfort High School Mineral County	It is my suggestion that problem solving also be the emphasis in Algebra I. Are material for individualizing Algebra skills available? What incentive does the student have for doing well? Will the student retake the test after or during the course? If the student fails the retake, will they repeat the Algebra Support?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Chemistry Eleven/Twelve				
11-12-96	Jay Folden 1106 Hollyberry Lane So Charleston WV 25309	This is a watered down course.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Review for Assessment (9-11)				
11-12-96	Winfield High Putnam County	Some of the Social Studies goals are out of sequence.		
11-12-96	Winfield High Putnam County	9.23 - Communism/Socialism does not have an impact on U.S. studies to 1900. 9.34 - 9.49 - 9.50		
11-15-96	Joyce Hobbs Berkeley County Schools	This is not a curriculum component, but a testing mandate.		
11/15/96	David Kennedy 16 Lincoln Way Buckhannon, WV 26201	It would be helpful to have more explanation her about what this means		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Additional Comments				
11-15-96	P. Malone Capital High Kanawha County	This all sounds great, if it were prepared for a magnet school specializing in math. But I feel the overall program is too rigorous for the students who pass through my classes. These standards would have been appropriate for 25% of the student's I've taught.		
11-15-96	Theresa Ramsey East Bank Jr. High Kanawha County	I cannot understand where this money will come from for all the technology listed - manipulatives, scientific/graphing calculators...		
11-15-96	East Bank Jr. High Kanawha County	I strongly feel that every student will not be capable for taking Algebra I. Many students are just not mature enough or have the thinking skills necessary to take Algebra I. Not even a support class could help some of these students.		
11-15-96	South Charleston High Kanawha County	Will we be trained for Applied II and Applied Geometry? Where will the equipment come from? Will we 'dumb down' or teach the test?		
11-15-96	South Charleston High Connie Smith, Mary Sorgman, Helen Shaw, Donna Shaver Kanawha County	I believe that business math should be offered as a math credit.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Additional Comments (Continued)				
11-15-96	South Charleston High Kanawha County	Computer and Technology under each course description. If we are to do this type of teaching, it is imperative that we have computers in our classrooms or access to a computer lab. Most computer labs are being used each period by students who have been assigned to computer classes.		
11-15-96	Linda Kesterson Herbert Hoover High Kanawha County	All students at our high school do not go to college. Business math should be included. Many students who take employment tests cannot pass the math section because it includes percentages, fractions, and simple multiplication.		
11-15-96	Linda L. Adkins Herbert Hoover High Kanawha County	All students do not go on to college. Some get jobs right out of high school. For this reason, I believe Business Math should be left in the curriculum.		
11-15-96	John Adams Jr. High Kanawha County	The teacher for Algebra I needs to be directed: a) teach a strong Algebra I class and half the students fail; or b) water down the subject matter and allow more students to pass?		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Additional Comments (Continued)				
11/15/96	Dan Gardner HC 75 Box 184B New Creek, WV 26743	I think exit exams in all the core areas given at the end of the first semester of the senior year would be most worthy. Many students take courses receiving grades from A to F, but how do we know what true learning of course content has occurred. I am not proposing competency testing where students would not graduate, if they did not pass these courses. I think that emphasis should be placed on learning basic computational skills and mathematical applications required in all walks of life. To expect a student who can not retain multiplication facts to retain algebraic and geometric concepts is totally unrealistic. The overall concept of having higher expectations is strong and valid. We need to be more honest about the realities of our world and school system. Mandates from our legislature must be funded to provide all the necessary resources required for optimal success. Students need one-on-one attention to learn just like we did.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Additional Comments (Continued)				
11/15/96	Stacy Patton North Jefferson Elementary Jefferson County	I am very concerned that many of the objectives for 3rd grade are developmentally inappropriate. We do not have the resources to meet the objectives for social studies and science. Our textbooks do not address these goals and objectives. We will need money to get resources.		
11/15/96	Lawrence Hitt Shepherdstown Elementary Jefferson County	Assessment instruments should be developed to math present curriculum, not the reverse. Format is good. I understand the purpose.		
11/15/96	Harpers Ferry Jr. High Jefferson County	Too much hast in getting legislation passed.		
11/15/96	Christy Clemons- Rodgers Carnegie Hall 105 Church Street Lewisburg, WV 24901	We are concerned about the potentially negative impact Senate Bill 300 could have on arts programming in our public schools.		
11/15/96	Charles Regan National Geographic Society 1145 17th Street N.W. Washington, D.C. 20036	The alliance now finds itself in a position to work with the Department of Education in providing professional development training to West Virginia teachers on the implementation of the Instructional goals and Objectives.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Additional Comments (Continued)				
11/15/96	Nancy Grant Franklin Elementary Pendleton County	I believe reteaching should be done at the discretion of the teacher and not be made mandatory. I sincerely hope teachers are not going to be required to list the goals and objectives on their lesson plans.		
11/15/96	Sharon Dawes Elementary Kanawha County	I cannot and will not, spend all my free time on creating teacher made lesson plans.		
11/15/96	Terry Sauvageot 312 Oak Tree Lane South Charleston, WV 25309	Why are we requiring social studies and science to be taught daily in grades 3-4? I feel the goals and objectives have been too Stanford 9 test driven. Advancing children to the next level when mastery occurs could cause some socially unacceptable situations (ie., a 4th grader at 2nd grade age level). The format is definately user-friendly.		
11/15/96	John Paull Hogg 116 Sunny Drive Barboursville, WV 25504	I am voicing my displeasure with the proposed changes in the social studies curriculum. What distresses me most is the "performance based" objectives.		
11/15/96	Jim Williams Rt. 1 Box 178 Ronceverte, WV 24970	The new curriculum of Policy 2520 does not meet the new National Geography Standards for 2000.		

Date Received	Individual/Organization	Comment	Action/Type	Rationale
INSTRUCTIONAL OBJECTIVES Additional Comments (Continued)				
11/15/96	Marion Allen Rainelle Elementary Kanawha County	You are expecting children to be rocket scientist by the time they leave elementary school. The idea of teaching-reteaching is not a new concept.		
11/15/96	Marion Dailey Milton Elementary Cabell County	I feel time could be better spent developing research/problem solving skills and encouraging cooperative learning activities.		
11/15/96	Deborah Rothacher 42126 Rothacher Road Sardis, Ohio 43944	I do not agree there will be no increase in money.		

KEN HECHLER
Secretary of State

MARY P. RATLIFF
Deputy Secretary of State

JAN CASTO
Deputy Secretary of State

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Chief of Staff

JUDY COOPER
Director, Administrative Law

PENNEY BARKER
Supervisor, Corporations

(Plus all the volunteer
help we can get)

TO: *Carolyn Meadows*
VIRGINIA HARRIS

AGENCY: EDUCATION

FROM: JUDY COOPER, DIRECTOR, ADMINISTRATIVE LAW DIVISION

DATE: February 13, 1997

THE ATTACHED RULE FILED BY YOUR AGENCY HAS BEEN ENTERED INTO OUR COMPUTER SYSTEM. PLEASE REVIEW, PROOF AND RETURN IT WITH ANY CORRECTIONS. IF THERE ARE NO CORRECTIONS, PLEASE SIGN THIS MEMO AND RETURN IT TO THIS OFFICE. YOU WILL BE SENT A FINAL VERSION OF THE RULE FOR YOUR RECORDS.

PLEASE RETURN EITHER THE CORRECTED RULE OR THIS FORM WITHIN TEN (10) WORKING DAYS OF THE DATE YOU RECEIVED THIS REQUEST. CALL IF YOU HAVE ANY QUESTIONS.

SERIES: 44 TITLE: 126 EDUCATION

* THE ATTACHED RULE HAS BEEN REVIEWED AND IS CORRECT.

SIGNED: *Carolyn Meadows*

TITLE OF PERSON SIGNING: *Director of Instructional Services*

DATE: *2-28-97*

* THE ATTACHED RULE HAS BEEN REVIEWED AND NEEDS CORRECTING. THE CORRECTIONS HAVE BEEN MARKED.

SIGNED: _____

TITLE OF PERSON SIGNING: _____

DATE: _____

NOTE: IF YOU ARE NOT THE PERSON WHO HANDLES THIS RULE, PLEASE FORWARD TO THE CORRECT PERSON.

