

## Agora Cyber Charter School – Academic Curriculum

Mathematics  
Language Arts (Reading and Writing)  
Science  
History  
Geography  
Economics  
Civics  
Foreign Language  
Music  
Visual Art  
Health Education  
Computer/Technology

### MATHEMATICS

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- demonstrating meanings for whole numbers, and commonly-used fractions and decimals (for example,  $\frac{1}{3}$ ,  $\frac{3}{4}$ , 0.5, 0.75), and representing equivalent forms of the same number through the use of physical models, drawings, calculators, and computers;
- reading and writing whole numbers and knowing place-value concepts and numeration through their relationships to counting, ordering, and grouping;
- using numbers to count, to measure, to label, and to indicate location;
- developing, testing, and explaining conjectures\* about properties of whole numbers, and commonly-used fractions and decimals (for example,  $\frac{1}{3}$ ,  $\frac{3}{4}$ , 0.5, 0.75); and
- using number sense to estimate and justify the reasonableness of solutions to problems involving whole numbers, and commonly-used fractions and decimals (for example,  $\frac{1}{3}$ ,  $\frac{3}{4}$ , 0.5, 0.75).
- reproducing, extending, creating, and describing patterns and sequences using a variety of materials (for example, beans, toothpicks, pattern blocks, calculators, unifix cubes, colored tiles);
- describing patterns and other relationships using tables, graphs, and open sentences\*;
- recognizing when a pattern exists and using that information to solve a problem; and
- observing and explaining how a change in one quantity can produce a change in another (for example, the relationship between the number of bicycles and the numbers of wheels)
- constructing, reading, and interpreting displays of data including tables, charts, pictographs, and bar graphs;
- interpreting data using the concepts of largest, smallest, most often, and middle;
- generating, analyzing, and making predictions based on data obtained from surveys and chance devices; and
- solving problems using various strategies for making combinations (for example, determining the number of different outfits that can be made using two blouses and three skirts).

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- recognizing shapes and their relationships (for example, symmetry, congruence) using a variety of materials (for example, pasta, boxes, pattern blocks);
- identifying, describing, drawing, comparing, classifying, and building physical models of geometric figures
- relating geometric ideas to measurement and number sense;
- solving problems using geometric relationships and spatial reasoning (for example, using rectangular coordinates to locate objects, constructing models of three-dimensional objects); and
- recognizing geometry in their world (for example, in art and in nature).
- knowing, using, describing, and estimating measures of length, perimeter, capacity, weight, time, and temperature;
- comparing and ordering objects according to measurable attributes (for example, longest to shortest, lightest to heaviest);
- demonstrating the process of measuring and explaining the concepts related to units of measurement;
- using the approximate measures of familiar objects (for example, the width of your finger, the temperature of a room, the weight of a gallon of milk) to develop a sense of measurement; and
- selecting and using appropriate standard and non-standard units of measurement in problem-solving situations
- demonstrating conceptual meanings for the four basic arithmetic operations of addition, subtraction, multiplication, and division;
- adding and subtracting commonly-used fractions and decimals using physical models (for example,  $\frac{1}{3}$ ,  $\frac{3}{4}$ , 0.5, 0.75);
- demonstrating understanding of and proficiency with basic addition, subtraction, multiplication, and division facts without the use of a calculator;
- constructing, using, and explaining procedures to compute and estimate with whole numbers; and
- selecting and using appropriate methods for computing with whole numbers in problem-solving situations from among mental arithmetic, estimation, paper-and-pencil, calculator, and computer methods.

### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- demonstrating meanings for integers, rational numbers, percents, exponents, square roots, and pi ( $\pi$ ) using physical materials and technology in problem-solving situations;
- reading, writing, and ordering integers, rational numbers, and common irrational numbers such as  $\sqrt{2}$ ,  $\sqrt{5}$ , and  $\pi$ ;
- applying number theory concepts (for example, primes, factors, multiples) to represent numbers in various ways;
- using the relationships among fractions, decimals, and percents, including the concepts of ratio and proportion, in problem-solving situations;
- developing, testing, and explaining conjectures about properties of integers and rational numbers; and

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- using number sense to estimate and justify the reasonableness of solutions to problems involving integers, rational numbers, and common irrational numbers such as  $\sqrt{2}$ ,  $\sqrt{5}$ , and  $\pi$ .
- representing, describing, and analyzing patterns and relationships using tables, graphs, verbal rules, and standard algebraic notation;
- describing patterns using variables, expressions, equations, and inequalities in problem-solving situations;
- analyzing functional relationships to explain how a change in one quantity results in a change in another (for example, how the area of a circle changes as the radius increases, or how a person's height changes over time);
- distinguishing between linear and nonlinear functions through informal investigations; and
- solving simple linear equations in problem-solving situations using a variety of methods (informal, formal, graphical) and a variety of tools (physical materials, calculators, computers).
- reading and constructing displays of data using appropriate techniques (for example, line graphs, circle graphs, scatter plots, box plots, stem-and-leaf plots) and appropriate technology;
- displaying and using measures of central tendency, such as mean, median, and mode, and measures of variability, such as range and quartiles;
- evaluating arguments that are based on statistical claims;
- formulating hypotheses, drawing conclusions, and making convincing arguments based on data analysis;
- determining probabilities through experiments or simulations;
- making predictions and comparing results using both experimental and theoretical probability drawn from real-world problems; and
- using counting strategies to determine all the possible outcomes from an experiment (for example, the number of ways students can line up to have their picture taken).
- constructing two- and three-dimensional models using a variety of materials and tools;
- describing, analyzing, and reasoning informally about the properties (for example, parallelism, perpendicularity, congruence) of two- and three-dimensional figures;
- applying the concepts of ratio, proportion, and similarity in problem-solving situations;
- solving problems using coordinate geometry;
- solving problems involving perimeter and area in two dimensions, and involving surface area and volume in three dimensions; and
- transforming geometric figures using reflections, translations, and rotations to explore congruence.
- estimating, using, and describing measures of distance, perimeter, area, volume, capacity, weight, mass, and angle comparison;
- estimating, making, and using direct and indirect measurements to describe and make comparisons;
- reading and interpreting various scales including those based on number lines, graphs, and maps;
- developing and using formulas and procedures to solve problems involving measurement;

- describing how a change in an object's linear dimensions affects its perimeter, area, and volume; and
- selecting and using appropriate units and tools to measure to the degree of accuracy required in a particular problem-solving situation;
- using models to explain how ratios, proportions, and percents can be used to solve real-world problems;
- constructing, using, and explaining procedures to compute and estimate with whole numbers, fractions, decimals, and integers;
- developing, applying, and explaining a variety of different estimation strategies in problem-solving situations, and explaining why an estimate may be acceptable in place of an exact answer; and
- selecting and using appropriate methods for computing with commonly used fractions and decimals, percents, and integers in problem-solving situations from among mental arithmetic, estimation, paper-and-pencil, calculator, and computer methods, and determining whether the results are reasonable.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- demonstrating meanings for real numbers, absolute value\*, and scientific notation using physical materials and technology in problem-solving situations;
- developing, testing, and explaining conjectures about properties of number systems and sets of numbers; and
- using number sense to estimate and justify the reasonableness of solutions to problems involving real numbers.
- modeling real-world phenomena (for example, distance-versus-time relationships, compound interest, amortization tables, mortality rates) using functions, equations, inequalities, and matrices;
- representing functional relationships using written explanations, tables, equations, and graphs, and describing the connections among these representations;
- solving problems involving functional relationships using graphing calculators and/or computers as well as appropriate paper-and-pencil techniques;
- analyzing and explaining the behaviors, transformations, and general properties of types of equations and functions (for example, linear, quadratic, exponential); and
- interpreting algebraic equations and inequalities geometrically and describing geometric relationships algebraically;
- designing and conducting a statistical experiment to study a problem, and interpreting and communicating the results using the appropriate technology (for example, graphing calculators, computer software);
- analyzing statistical claims for erroneous conclusions or distortions;
- fitting curves to scatter plots, using informal methods or appropriate technology, to determine the strength of the relationship between two data sets and to make predictions;

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- drawing conclusions about distributions of data based on analysis of statistical summaries (for example, the combination of mean and standard deviation, and differences between the mean and median);
- using experimental and theoretical probability to represent and solve problems involving uncertainty (for example, the chance of playing professional sports if a student is a successful high school athlete); and
- solving real-world problems with informal use of combinations and permutations\* (for example, determining the number of possible meals at a restaurant featuring a given number of side dishes).
- finding and analyzing relationships among geometric figures using transformations (for example, reflections, translations, rotations, dilations) in coordinate systems;
- deriving and using methods to measure perimeter, area, and volume of regular and irregular geometric figures;
- making and testing conjectures about geometric shapes and their properties, incorporating technology where appropriate; and
- using trigonometric ratios in problem-solving situations (for example, finding the height of a building from a given point, if the distance to the building and the angle of elevation are known).
- measuring quantities indirectly using techniques of algebra, geometry, or trigonometry;
- selecting and using appropriate techniques and tools to measure quantities in order to achieve specified degrees of precision, accuracy, and error (or tolerance) of measurements; and
- determining the degree of accuracy of a measurement (for example, by understanding and using significant digits).
- using ratios, proportions, and percents in problem-solving situations;
- selecting and using appropriate methods for computing with real numbers in problem-solving situations from among mental arithmetic, estimation, paper-and-pencil, calculator, and computer methods, and determining whether the results are reasonable; and
- describing the limitations of estimation, and assessing the amount of error resulting from estimation within acceptable limits

For students continuing their mathematics education beyond these standards, what they will know and are able to do include...

- investigating limiting processes by examining infinite sequences and series; and
- explaining relationships among real numbers, complex numbers, and vectors using models.
- using rational, polynomial, trigonometric, and inverse functions to model real-world phenomena;
- representing and solving problems using linear programming and difference equations;
- solving systems of linear equations using matrices and vectors;
- describing the concept of continuity of a function;
- performing operations on and between functions; and
- making the connections between trigonometric functions and polar coordinates, complex numbers, and series.

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- creating and interpreting discrete and continuous probability distributions, and understanding their application to real-world situations (for example, insurance);
- testing hypotheses using appropriate statistics;
- exploring the effect of sample size on the results of statistical surveys using experiments and simulations; and
- solving real-world problems with formal use of combinations and permutations.
- deducing properties of figures using vectors;
- applying transformations, coordinates, and vectors in problem-solving situations; and
- describing, analyzing, and extending patterns produced by processes of geometric change (for example, limits and fractals).
- demonstrating the meanings of area under a curve and length of an arc.
- analyzing and solving optimization problems;
- analyzing different algorithms (for example, sorting) for efficiency;
- analyzing and using critical path algorithms (for example, determining in which order to perform a set of tasks in a large project); and
- investigating problem situations that arise in connection with computer validation and the application of algorithms.

### READING & WRITING

#### GRADES K-4

In grades K-4, what the students know and are able to do include...

- using a full range of strategies to comprehend materials such as directions, nonfiction material, rhymes and poems, and stories.
- generating topics and developing ideas for a variety of writing and speaking purposes (for example, telling a story, publishing a class newsletter, writing a letter to an adult, writing or orally presenting a book report, creating and producing a play, introducing a speaker or an event, narrating a presentation);
- organizing their speaking and writing;
- choosing vocabulary that communicates their messages clearly and precisely;
- revising and editing speech and writing; and
- creating readable documents with legible handwriting or word processing at the appropriate time.
- knowing and using subject/verb agreement;
- knowing and using correct modifiers;
- knowing and using correct capitalization, punctuation, and abbreviations; and
- spelling frequently used words correctly using phonics rules and exceptions.
- recognizing an author's point of view;
- predicting and drawing conclusions about stories;
- differentiating between fact and opinion in written and spoken forms;
- using reading, writing, speaking, and listening to define and solve problems;
- responding to written and oral presentations as a reader, listener, and articulate speaker;
- formulating questions about what they read, write, hear, and view; and
- using listening skills to understand directions.

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- using organizational features of printed text (for example, page numbering, alphabetizing, glossaries, chapter heading, tables of contents, indexes, captions);
- recognizing organizational features of electronic information (for example, pull-down menus, icons, key word searches);
- using organizational features to locate media or electronic information (for example, passwords, entry menu features, pull-down menus, icons, key word searches);
- taking notes, outlining, and identifying main ideas in resource materials;
- sorting information as it relates to a specific topic or purpose; and
- giving credit for borrowed information by telling or listing sources.
- reading, responding to, and discussing a variety of literature such as folk tales, legends, myths, fiction, rhymes and poems, non-fiction, and content-area reading;
- reading, responding to, and discussing literature as a way to explore the similarities and differences among stories and the ways in which those stories reflect the ethnic background of the author and the culture in which they were written;
- recognizing the concept of classic or enduring literature, and reading and listening to classic works;
- using literary terminology such as setting, plot, character, problem, and solution; and
- using new vocabulary from literature in other context.

### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- using a full range of strategies to comprehend technical writing, newspapers, magazines, poetry, short stories, plays, and novels in addition to the types of reading material mentioned above. Students extend their thinking and understanding as they read stories about people from similar and different backgrounds.
- writing stories, letters, and reports with greater detail and supporting material;
- choosing vocabulary and figures of speech that communicate clearly;
- drafting, revising, editing, and proofreading for a legible final copy;
- applying skills in analysis, synthesis, evaluation, and explanation to their writing and speaking;
- incorporating source materials into their speaking and writing (for example, interviews, news articles, encyclopedia information);
- writing and speaking in the content areas (for example, science, geography, history, literature), using the technical vocabulary of the subject accurately; and
- recognizing stylistic elements such as voice, tone, and style.
- identifying the parts of speech such as nouns, pronouns, verbs, adverbs, adjectives, conjunctions, prepositions, and interjections;
- using correct pronoun case, regular and irregular noun and verb forms, and subject-verb agreement involving comparisons in writing and speaking;
- using modifiers, homonyms, and homophones in writing and speaking;
- using simple, compound, complex, and compound/complex sentences in writing and speaking;
- punctuating and capitalizing titles and direct quotations, using possessives, and correct paragraphing in writing;

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- using prefixes, root words, and suffixes correctly in writing and speaking;
- expanding spelling skills to include more complex words;
- demonstrating use of conventional spelling in their published works; and
- using resources such as spell checkers, dictionaries, and charts to monitor their spelling accuracy.
- recognizing an author's or speaker's point of view and purpose, separating fact from opinion;
- using reading, writing, speaking, listening, and viewing skills to solve problems and answer questions;
- making predictions, drawing conclusions, and analyzing what they read, hear, and view;
- recognizing, expressing, and defending a point of view orally in an articulate manner and in writing; and
- determining literary quality based on elements such as the author's use of vocabulary, character development, plot development, description of setting, and realism of dialogue;
- using organizational features of printed text such as prefaces, afterwords, and appendices;
- using organizational features of electronic information (for example, microfiche headings and numbering, headings for accessing nested information in hypertext media, electronic media CD-ROM, laser disc), and library and interlibrary catalog databases;
- locating and selecting relevant information;
- using available technology to research and produce an end-product that is accurately documented; and
- giving credit for borrowed information in a bibliography.
- reading, responding to, and discussing a variety of novels, poetry, short stories, non-fiction, content-area and technical material, and plays;
- reading, responding to, and discussing literature that represents points of view from places, people, and events that are familiar and unfamiliar;
- distinguishing the elements that characterize and define a literary "classic";
- comparing the diverse voices of our national experience as they read a variety of United States literature;
- using literary terminology accurately, including setting, character, conflict, plot, resolution, theme, foreshadowing, and figurative language; and
- using new vocabulary from literature in other context.

### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- using a full range of strategies to comprehend essays, speeches, autobiographies, and first-person historical documents in addition to the types of literature mentioned above;
- using fictional, dramatic, and poetic techniques in writing;
- conveying technical information in a written form appropriate to the audience;
- supporting an opinion using various forms of persuasion (factual or emotional) in speaking and writing;

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- incorporating material from a wider range of sources (for example, newspapers, magazines, interviews, technical publications, books) in their writing and speaking;
- selecting a focused topic and drafting, revising, editing, and proofreading a legible final copy;
- writing in various specialized fields such as career and academic interest areas (for example, scientific, technical, business communications); and
- experimenting with stylistic elements such as voice, tone, and style.
- using pronoun reference correctly in writing and speaking;
- using phrases and clauses for purposes of modification and parallel structure in writing and speaking;
- using internal capitalization and punctuation of secondary quotations in writing;
- using manuscript forms specified in various style manuals for writing (for example, indenting for extended quotations, precise placement and form of page numbers, appropriate line spacing); and
- refining spelling and grammatical skills and becoming a self-evaluator of their writing and speaking;
- recognizing an author's point of view, purpose, and historical and cultural context;
- using reading, writing, listening, articulate speaking, and viewing to solve problems;
- knowing what constitutes literary quality based on elements such as the author's point of view, the author's selection of significant details, theme development, and the author's reflection of events and ideas of his or her lifetime; and
- critiquing the content of written work and oral presentations.
- using organizational features of printed text such as citations, end notes, and bibliographic references to locate relevant information;
- evaluating information in light of what they know and their specific needs;
- using organizational features of electronic text such as bulletin boards, database keyword searches, and e-mail addresses to locate information when technology is available;
- using strategies to gain information from journals, research studies, and technical documents; and
- using available technology to access information, conduct research, and produce a carefully documented product.
- reading, responding to, and discussing novels, poetry, short stories, non-fiction, content-area and technical material, plays, essays, and speeches;
- using literary terminology accurately, such as theme, mood, diction, idiom, perspective, style, and point of view;
- identifying recurrent themes in United States literature; and
- developing and supporting a thesis about the craft and significance of particular works of literature, both classic and contemporary, from a variety of ethnic writers

For students extending their English/Language Arts education beyond the standards, what they know and are able to do may include...

- using a full range of strategies to comprehend literary criticism and literary analysis, professional and technical journals, and professional-level reading materials that match their career or academic interests.

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- writing longer, formal papers using sources such as technical journals and government publications to support an original thesis;
- making oral presentations for audiences within or outside the school in a variety of media;
- using style books or technical manuals to become self-evaluators of their writing; and
- analyzing, synthesizing, and evaluating a variety of written and spoken material
- applying principles of formal logic to written and oral texts.
- understanding and applying knowledge of the structure, organization, and use of various media, reference, and technological information sources in their reading and writing as they meet academic, personal, and professional challenges;
- locating information appropriate for their reading and writing purposes such as career and academic interest, leisure time, and self-improvement;
- using information from various resources, both primary and secondary, as a vehicle for expressing their own thoughts, impressions, and ideas;
- giving precise, formal credit for others' ideas, images, or information; and
- planning and presenting multimedia presentations
- comparing and contrasting stories, novels, poems, and other forms of literature from different countries, time periods, or cultures;
- using novels, poetry, short stories, non-fiction, autobiographies, plays, essays, speeches, literary criticisms and analyses, and any other literature to explore academic, personal, or career issues; and
- understanding the common themes in the literature of the United States and in world literature.

### SCIENCE

1. Students understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigations.
2. Physical Science: Students know and understand common properties, forms, and changes in matter and energy.
3. Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment.
4. Earth and Space Science: Students know and understand the processes and interactions of Earth's systems and the structure and dynamics of Earth and other objects in space.
5. Students know and understand interrelationships among science, technology, and human activity and how they can affect the world.
6. Students understand that science involves a particular way of knowing and understand common connections among scientific disciplines.

STANDARD 1: Students understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigations.

### GRADES K-4

In grades K-4, what students know and are able to do include...

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- asking questions and stating predictions (hypotheses) that can be addressed through scientific investigation;
- selecting and using simple devices to gather data related to an investigation (for example, length, volume, and mass measuring instruments, thermometers, watches, magnifiers, microscopes, calculators, and computers);
- using data based on observations to construct a reasonable explanation; and
- communicating about investigations and explanations.

### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying and evaluating alternative explanations and procedures;
- using examples to demonstrate that scientific ideas are used to explain previous observations and to predict future events (for example, plate tectonics and future earthquake activity);
- asking questions and stating hypotheses that lead to different types of scientific investigations (for example, experimentation, collecting specimens, constructing models, researching scientific literature);
- creating a written plan for an investigation;
- using appropriate tools, technologies, and measurement units to gather and organize data;
- interpreting and evaluating data in order to formulate conclusions;
- communicating results of their investigations in appropriate ways (for example, written reports, graphic displays, oral presentations);
- using metric units in measuring, calculating, and reporting results;
- explaining that scientific investigations sometimes result in unexpected findings that lead to new questions and more investigations; and
- giving examples of how collaboration can be useful in solving scientific problems and sharing findings.

### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- asking questions and stating hypotheses, using prior scientific knowledge to help guide their development;
- creating and defending a written plan of action for a scientific investigation;
- selecting and using appropriate technologies to gather, process, and analyze data and to report information related to an investigation;
- identifying major sources of error or uncertainty within an investigation (for example, particular measuring devices and experimental procedures);
- constructing and revising scientific explanations and models, using evidence, logic, and experiments that include identifying and controlling variables;
- communicating and evaluating scientific thinking that leads to particular conclusions;
- recognizing and analyzing alternative explanations and models; and

- explaining the difference between a scientific theory and a scientific hypothesis.

For students continuing their science education beyond the standards, what they know and are able to do may include...

- designing and completing an advanced scientific investigation that extends over several days or weeks; and
- continuing to practice and apply inquiry skills as they extend their understanding of science content through further study.

STANDARD 2: Physical Science: Students know and understand common properties, forms, and changes in matter and energy. (Focus: Physics and Chemistry)

2.1 Students know that matter has characteristic properties, which are related to its composition and structure.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- examining, describing, classifying, and comparing tangible objects in terms of common physical properties (for example, state of matter, size, shape, texture, flexibility, color);
- measuring common physical properties of objects (for example, length, mass, volume, temperature); and
- creating mixtures and separating them based on differences in properties (for example, salt and sand, iron filings and soil, oil and water)

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- examining, describing, comparing, measuring, and classifying objects based on common physical and chemical properties (for example, states of matter, mass, volume, electrical charge, temperature, density, boiling points, pH, magnetism, solubility);
- separating mixtures of substances based on their properties (for example, solubility, boiling points, magnetic properties, densities);
- classifying and describing matter in terms of elements, compounds, mixtures, atoms, and molecules (for example, copper is an element, water is a compound, air is a mixture); and
- developing simple models to explain observed properties of matter (for example, using a particle model to account for the solubility of a substance).

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

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- examining, describing, measuring, classifying, and predicting common properties of substances (for example, electrical charge, chemical reactivity, acidity, electrical conductivity, radioactivity, relationships in the periodic table);
- describing and explaining properties and composition of samples of matter using models (for example, atomic and molecular structure, the periodic table);
- separating substances based on their chemical and physical properties (for example, color, solubility, chemical reactivity, melting point, boiling point); and
- using word and chemical equations to relate observed changes in matter to its composition and structure.

2.2 Students know that energy appears in different forms, and can move (be transferred) and change (be transformed).

### RATIONALE

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- recognizing that energy (for example, light, heat, motion, sound, mechanical) can affect common objects and is involved in common events;
- making observations and gathering data on quantities associated with energy, movement, and change (for example, distances for a bean-launcher, time for a melting ice cube); and
- comparing quantities associated with energy movement and change by constructing simple diagrams or charts (for example, graph of launch distances, chart of melting time).

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- measuring quantities associated with energy forms (for example, temperature, mass, speed, distance, electrical charge, current, voltage); and
- describing qualitative and quantitative relationships, using data and observations and graphs, associated with energy transfer or energy transformation (for example, speed of object vs. height of ramp; length of string vs. pitch of sound; electric current vs. volume of gas produced in electrolysis, with length of time kept constant).

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- identifying, measuring, calculating, and analyzing quantitative relationships involved with energy forms (for example, heat transfer in a system involving mass, specific heat, and change in temperature of matter); and
- identifying, measuring, calculating, and analyzing qualitative and quantitative relationships associated with energy transfer or energy transformation (for example,

changes in temperature, velocity, potential energy, kinetic energy, conduction, convection, radiation, voltage, current).

2.3 Students understand that interactions can produce changes in a system, although the total quantities of matter and energy remain unchanged.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- observing and describing parts of system (for example, water in a closed jar, water in an open jar, a plant terrarium);
- describing an observed change (for example, a melting ice cube, crystal growth, burning candle, physical breakage) in terms of starting conditions, type of change, and ending conditions, using words, diagrams, or graphs; and
- predicting what changes and what remains unchanged when matter experiences an external influence (for example, a push or pull, addition or removal of heat, division of clay into pieces, melting an ice cube, changing a ball of clay to a flattened shape).

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying and classifying factors causing change within a system (for example, force, light, heat);
- identifying and predicting what will change and what will remain unchanged when matter experiences an external force or energy change (for example, boiling a liquid; comparing the force, distance, and work involved in simple machines);
- observing and gathering data to support the concept of conservation of mass within a closed system (for example, precipitation reaction, forming mixtures, gas production);
- describing, measuring (for example, temperature, mass, volume, melting point of a substance) and calculating quantities before and after a chemical or physical change within a system (for example, temperature change, mass change, specific heat); and
- describing, measuring (for example, time, distance, mass, force) and calculating quantities that characterize moving objects and their interactions within a system (for example, force, velocity, acceleration, potential energy, kinetic energy).

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- identifying, describing, and explaining physical and chemical changes involving the conservation of matter and energy (for example, oscillating pendulum/spring, chemical reactions, nuclear reactions);
- observing, measuring, and calculating quantities to demonstrate conservation of matter and energy in chemical changes (for example, acid-base, precipitation, oxidation-

reduction reactions), and physical interactions of matter (for example, force, work, power);

- describing and predicting chemical changes (for example, combustion, simple chemical reactions), and physical interactions of matter (for example, velocity, force, work, power), using word or symbolic equations; and
- describing and explaining physical interactions of matter using conceptual models (for example, conservation laws of matter and energy, particle model for gaseous behavior)

For students continuing their science education beyond the standards, what they know and are able to do may include...

- relating their prior knowledge and understanding of properties of matter to observable characteristics of materials and emerging technologies (for example, semiconductors, superconductors, photovoltaics, ceramics);
- modeling quantitative aspects of chemical and physical interactions (for example, rates of reactions, stoichiometry, electromagnetic phenomena, statics and dynamics, electrochemistry);
- applying knowledge and understanding of chemical and physical interactions to explore factors that influence or govern change (for example, equilibrium constants, kinetics, thermodynamics); and
- distinguishing among different types of constancy (for example, static and dynamic equilibrium, symmetry, uniform/accelerated motion) and different types of change (for example, qualitative and quantitative trends, cyclic change, chaotic systems).

STANDARD 3: Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment. (Focus: Biology--Anatomy, Physiology, Botany, Zoology, Ecology)

3.1 Students know and understand the characteristics of living things, the diversity of life, and how living things interact with each other and with their environment.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- distinguishing living from nonliving things;
- classifying a variety of organisms according to selected characteristics (for example, backbone vs. no backbone);
- describing the basic needs (for example, food, water, air, shelter, space) of an organism; and
- giving examples of how organisms interact with each other and with nonliving parts of their habitat.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- constructing and using classification systems based on the structure of organisms;
- describing the importance of plant and animal adaptations, including local examples;
- creating and interpreting food chains and food webs;
- explaining the interaction and interdependence of nonliving and living components within ecosystems; and
- describing how an environment’s ability to provide food, water, space, and essential nutrients determines carrying capacity.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- using and producing a variety of classification systems for organisms (for example, the five-kingdom classification, classification based on behavior);
- predicting and describing the interactions of populations and ecosystems;
- explaining how adaptations (for example, structure, behavior) of an organism determine its niche (role) in the environment;
- explaining how changes in an ecosystem can affect biodiversity and how biodiversity contributes to an ecosystem’s stability; and
- analyzing the dynamic equilibrium of ecosystems, including interactions among living and nonliving components (for example, tropical deforestation is linked to decreased global precipitation; Mount St. Helens’ eruption had impact on the local ecosystem).

3.2 Students know and understand interrelationships of matter and energy in living systems.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- recognizing that green plants need energy from sunlight and various raw materials to live, and animals consume plants and other organisms to live; and
- recognizing the interrelationships of organisms by tracing the flow of matter and energy in a food chain.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing the basic processes of photosynthesis and respiration and their importance to life (for example, set up a terrarium or aquarium and make changes such as blocking out light);
- comparing and contrasting food webs within and between different ecosystems (for example, grasslands, tundra, marine) and predicting the consequences of disrupting one of the organisms in a food web;

- describing ways (for example, digestion, transport of nutrients by circulatory system) that multi-cellular organisms get food and other matter to their cells;
- explaining the recycling of materials by determining a pathway of a substance that is important for life (for example, trace water through an ecosystem); and
- describing the role of organisms in the decomposition and recycling of dead organisms (for example, bacteria's role in the decomposition and recycling of matter from a dead animal)

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- comparing and contrasting the processes of photosynthesis and respiration (for example, in terms of energy and products);
- explaining how simple molecules can be built into larger molecules within organisms (for example, amino acids serve as building blocks of proteins; carbon dioxide and water are the basic materials for building sugars through photosynthesis);
- explaining how large molecules (for example, starch, protein) are broken down into smaller molecules, serving as an energy source or as basic building blocks in organisms;
- explaining how energy is used in the maintenance, repair, growth, and development of tissues (for example, in the production of new skin cells requires energy); and
- describing the cycling of matter and the movement and change of energy through the ecosystem (for example, some energy dissipates as heat as it is transferred through a food web).

3.3 Students know and understand how the human body functions, factors that influence its structures and functions, and how these structures and functions compare with those of other organisms.

#### GRADES K-4

In grades K-4, what students know and are able to do includes

- describing human body systems (for example, digestive, respiratory, circulatory, skeletal, muscular);
- describing the basic food requirements for humans as summarized in the nutrition pyramid; and
- describing life cycles of selected organisms (for example, frog, chicken, butterfly, radish, bean plant)

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing the observable components and functions of a cell (for example, cell membrane, nucleus, cytoplasm, chloroplasts; movement of molecules into and out of cells);

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- comparing and contrasting the basic structures and functions of different types of cells (for example, single-celled organisms in pond water, Elodea, onion cell, human cheek cell);
- describing the growth and development of several organisms (for example, embryonic development of a vertebrate);
- describing the structures and functions of human body systems; and
- describing and giving examples of noncommunicable diseases and communicable diseases (for example, heart disease and chicken pox)

### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- describing cellular organelles and their function (for example, the relationship of ribosomes to protein synthesis; the relationship of mitochondria to energy transformation);
- differentiating among levels of organization (cells, tissues, and organs) and their roles within the whole organism;
- explaining human body functions in terms of interacting organ systems composed of specialized structures that maintain or restore health (for example, mechanisms involved in homeostasis [balance], such as feedback in the endocrine system);
- comparing and contrasting characteristics of and treatments for various types of medical problems (for example, accidental, infectious, genetic);
- using examples to explain the relationship of structure and function in organisms; and
- describing the pattern and process of reproduction and development in several organisms (for example, earthworm, chick, human)

3.4 Students know and understand how organisms change over time in terms of biological evolution and genetics.

### GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying characteristics that are common to all individuals of a species (for example, offspring resemble their parents);
- recognizing that there are differences in appearance among individuals of the same population or group;
- identifying characteristics of plants and animals that allow them to live in specific environments; and
- describing examples of extinct organisms based on fossil evidence (for example, dinosaurs).

### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing the purpose of body cell division and sex cell division;
- describing the role of chromosomes and genes in heredity (for example, genes control traits, while chromosomes are made up of many genes); and
- describing evidence that reveals changes or constancy in groups of organisms over geologic time.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- comparing and contrasting the purpose and process of cell division (mitosis) with the production of sex cells (meiosis);
- giving examples to show how some traits can be inherited while others are due to the interaction of genes and the environment (for example, skin cancer triggered by over-exposure to sunlight or contact with chemical carcinogens);
- describing how DNA serves as the vehicle for genetic continuity and the source of genetic diversity upon which natural selection can act;
- describing how mutation, natural selection, and reproductive isolation can lead to new species and explain the planet's biodiversity;
- explaining why variation within a population improves the chances that the species will survive under new environmental conditions;
- describing the general structure and function of the gene (DNA) and its role in heredity and protein synthesis (for example, replication of DNA and the role of RNA in protein synthesis); and
- calculating the probability that an individual will inherit a particular single gene trait (for example, calculating the probability of offspring inheriting cystic fibrosis when both parents are carriers for the disease).

For students continuing their science education beyond the standards, what they know and are able to do may include...

- describing how, over long periods of time, ecosystems can remain stable and, if altered by factors such as climatic change, return to stability;
- explaining specializations that allow different types of cells to perform different functions;
- describing how balance (homeostasis) is maintained within an organism when its environment is altered (for example, the relationship between blood glucose level and insulin production; carbon dioxide and oxygen balance in the body);
- describing the role of gene mutations that result in uncontrolled cell division (for example, cancer);
- explaining the role of exposure to certain factors (for example, chemical, biological, radiation) that may increase the rate of mutation, and therefore the incidence of cancer and other diseases;
- determining the degree of kinship between organisms or species from estimations of the similarity of their nucleic acid sequences, which often closely match classifications based on anatomical similarities; and

- explaining how the rate of environmental change may exceed the capacity of organisms to respond to change, leading to the extinction of species

STANDARD 4: Earth and Space Science: Students know and understand the processes and interactions of Earth’s systems and the structure and dynamics of Earth and other objects in space. (Focus: Geology, Meteorology, Astronomy, Oceanography)

4.1 Students know and understand the composition of Earth, its history, and the natural processes that shape it.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- describing different types and uses of Earth materials (for example, rocks, soil, minerals);
- recognizing that fossils are evidence of past life;
- identifying major features of Earth’s surface (for example, mountains, rivers, plains, hills, oceans, plateaus);
- describing natural processes that change Earth’s surface (for example, weathering, erosion, mountain building, volcanic activity); and
- recognizing that humans are affected by natural events (for example, earthquakes, volcanoes, floods).

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining how minerals, rocks, and soils form;
- explaining how fossils are formed and used as evidence to indicate that life has changed through time;
- modeling natural processes that shape Earth’s surface (for example, weathering, erosion, mountain building, volcanic activity); and
- explaining the distribution and causes of natural events (for example, earthquakes, volcanoes, landslides)

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- describing the composition and structure of Earth’s interior;
- using the theory of plate tectonics to explain relationships among earthquakes, volcanoes, mid-ocean ridges, and deep-sea trenches;
- using evidence (for example, fossils, rock layers, ice cores, radiometric dating) to investigate how Earth has changed or remained constant over short and long periods of time (for example, Mount St. Helens’ eruption);

- evaluating the feasibility of predicting and controlling natural events (for example, earthquakes, floods, landslides); and
- analyzing the costs, benefits, and consequences of natural resource exploration, development, and consumption

4.2 Students know and understand the general characteristics of the atmosphere and fundamental processes of weather.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- recognizing that the Sun is a principal source of Earth's heat and light;
- recognizing how our daily activities are affected by the weather (for example, types of clothing, travel plans, recreational activity); and
- describing existing weather conditions by collecting and recording weather data (for example, temperature, precipitation, amount of cloud cover).

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing the basic composition, properties, and structure of the atmosphere (for example, the range and distribution of temperature and pressure in the troposphere and stratosphere);
- observing, measuring, and recording changes in weather conditions (for example, humidity, temperature, air pressure, cloud types, wind, precipitation);
- explaining how atmospheric circulation is driven by solar heating (for example, the transfer of energy by radiation, convection, conduction); and
- describing large-scale and local weather systems (for example, fronts, air masses, storms).

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing the structure of, and changes in, the atmosphere, and its significance for life on Earth;
- explaining and analyzing general weather patterns by collecting, plotting, and interpreting data;
- describing how energy transfer within the atmosphere influences weather (for example, the role of conduction, radiation, convection, and heat of condensation in clouds, precipitation, winds, storms);
- investigating and explaining the occurrence and effects of storms on human populations and the environment; and
- describing and explaining factors that may influence weather and climate (for example, proximity to oceans, prevailing winds, fossil fuel burning, volcanic eruptions).

4.3 Students know major sources of water, its uses, importance, and cyclic patterns of movement through the environment.

GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying major sources of water (for example, oceans, glaciers, rivers, groundwater, atmosphere);
- identifying and describing the states (solid, liquid, gaseous) in which water can be found on Earth; and
- recognizing the importance and uses of water (for example, drinking, washing, irrigating)

GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do includes

- investigating and comparing the properties and behavior of water in its solid, liquid, and gaseous states;
- describing the distribution and circulation of the world's water through oceans, glaciers, rivers, groundwater, and atmosphere; and
- describing the composition and physical characteristics of oceans (for example, currents, waves, features of the ocean floor, salinity).

GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- identifying and explaining factors that influence the quality of water needed to sustain life;
- identifying and analyzing the costs, benefits, and consequences of using water resources;
- explaining interactions between water and other Earth systems (for example, the biosphere, lithosphere, and atmosphere); and
- explaining interrelationships between the circulation of oceans and weather and climate.

4.4 Students know the structure of the solar system, composition and interactions of objects in the universe, and how space is explored.

GRADES K-4

In grades K-4, what students know and are able to do include...

- describing what can be readily observed by the unaided eye in the daytime and nighttime sky (for example, the Sun, Moon, planets, stars, and constellations);

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- describing the motion of Earth in relation to the Sun, including the concepts of day, night, and year;
- recognizing the characteristics of seasons;
- identifying basic components of the solar system (for example, Sun, planets, moons); and
- describing a space exploration event such as a manned or unmanned space mission.

### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing the basic components, composition, size, and theories of origin of the solar system;
- explaining the effects of relative motion and positions of the Sun, Earth, and Moon (for example, seasons, eclipses, moon phases, tides);
- comparing Earth to other planets (for example, size, composition, relative distance from the Sun); and
- identifying technology needed to explore space (for example, telescopes, spectroscopes, spacecraft, life support systems).

### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining the causes of and modeling the varied lengths of days, seasons, and phases of the Moon;
- describing the effect of gravitation on the motions observed in the solar system and beyond;
- describing electromagnetic radiation produced by the Sun and other stars (for example, X-ray, ultraviolet, visible light, infrared, radio);
- comparing the Sun with other stars (for example, size, color, temperature); and
- identifying and describing the everyday impact of recent space technology (for example, more sophisticated computers, remote sensing, medical imaging)

For students continuing their science education beyond the standards, what they know and are able to do may include...

- explaining relationships and interactions between living things and Earth systems (for example, the atmosphere, geosphere, and hydrosphere);
- predicting possible climatic changes and their effects based on past and present climatic data;
- identifying and predicting natural hazards, using historical data;
- describing the life cycle of a star; and
- describing evidence that supports past and current scientific theories of the origin of the universe.

STANDARD 5: Students know and understand interrelationships among science, technology, and human activity and how they can affect the world.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- recognizing the diversity of resources provided by the Earth and Sun (for example, soil, fuels, minerals, medicines, food);
- inventing a device that addresses an everyday problem (or task), and communicating the problem (or task), design, and solution;
- describing resource-related activities in which they could participate that can benefit their communities (for example, recycling, water conservation); and
- identifying careers that use science and technology.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- investigating and describing the extent of human uses of renewable and non-renewable resources (for example, forests, fossil fuels);
- describing advantages and disadvantages that might accompany the introduction of a new technology (for example, mountain bikes, cellular telephones, pagers);
- describing how the use of technology can help solve an individual or community problem (for example, using catalytic converters on automobiles to help reduce air pollution); and
- describing how people use science and technology in their professions.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing benefits, limitations, costs, and consequences involved in using technology or resources (for example, X-rays, agricultural chemicals, natural gas reserves);
- analyzing how the introduction of a new technology has affected or could affect human activity (for example, invention of the telescope, applications of modern telecommunications);
- demonstrating the interrelationships between science and technology (for example, building a bridge, designing a better running shoe); and
- explaining the use of technology in an occupation.

For students continuing their science education beyond the standards, what they know and are able to do may include...

- applying their knowledge and understanding of chemical and physical interactions to explain present and anticipated technologies (for example, lasers, ultrasound, superconducting materials, photocopy machines); and

- exploring the scientific and technological aspects of contemporary problems (for example, issues related to nutrition, air quality, natural resources).

STANDARD 6: Students understand that science involves a particular way of knowing and understand common connections among scientific disciplines.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- recognizing that when a science experiment is repeated with the same conditions, the experiment generally works the same way;
- comparing knowledge gained from direct experience to knowledge gained indirectly (for example, collecting data about student heights in their class and comparing the results to similar data collected in another class or school);
- identifying observable patterns and changes in their lives and predicting future events based on those patterns (for example, seasonal weather patterns);
- describing and comparing the components and interrelationships of a simple system (for example, tracing the continuous flow of water through an aquarium, filter, and pump); and
- comparing a model with what it represents (for example, comparing a map of the school to the actual school; a model of the Earth to the Earth itself).

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining why a controlled experiment must have comparable results when repeated;
- giving examples of how scientific knowledge changes as new knowledge is acquired and previous ideas are modified (for example, through space exploration);
- describing contributions to the advancement of science made by people in different cultures and at different times in history;
- identifying, comparing, and predicting variables and conditions related to change (for example, climate, population, motion);
- identifying and illustrating natural cycles within systems (for example, water, planetary motion, geological changes, climate); and
- using a model to predict change (for example, computer simulation, video sequence, stream table).

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- evaluating print and visual media for scientific evidence, bias, or opinion;
- explaining that the scientific way of knowing uses a critique and consensus process (for example, peer review, openness to criticism, logical arguments, skepticism);

- using graphs, equations, or other models to analyze systems involving change and constancy (for example, comparing the geologic time scale to shorter time frames);
- analyzing and comparing models of cyclic change as used within and among scientific disciplines (for example, water cycle, circular motion, sound waves, weather cycles);
- identifying and predicting cause-effect relationships within a system (for example, the effect of temperature on gas volume, effect of carbon dioxide level on the greenhouse effect, effects of changing nutrients at the base of a food pyramid);
- identifying and describing the dynamics of natural systems (for example, weather systems, ecological systems, body systems, systems at dynamic equilibrium);
- identifying and testing a model to analyze systems involving change and constancy (for example, a mathematical expression for gas behavior; constructing a closed ecosystem such as an aquarium);
- explaining an exponential model (for example, pH scale, population growth, Richter scale); and
- refining a hypothesis based on an accumulation of data over time (for example, Alvarez’s theory on dinosaur extinction)

For students continuing their science education beyond the standards, what they know and are able to do may include...

- relating small-scale phenomena to large-scale properties (for example, intermolecular forces related to physical properties); and
- tracing the development of an invention, theory, or discovery to demonstrate the dynamic nature of science.

## HISTORY

1. Students understand the chronological organization of history and know how to organize events and people into major eras to identify and explain historical relationships.
2. Students know how to use the processes and resources of historical inquiry.
3. Students understand that societies are diverse and have changed over time.
4. Students understand how science, technology, and economic activity have developed, changed, and affected societies throughout history.
5. Students understand political institutions and theories that have developed and changed over time.
6. Students know that religious and philosophical ideas have been powerful forces throughout history.

Note: The broad term “History”, as used in the standards, refers to any and/or all areas of history under study at a given time. This includes the history of the United States, the World (including Western Civilization and the Americas), and the State of Pennsylvania, where appropriate, over the K-12 years.

STANDARD 1: Students understand the chronological organization of history and know how to organize events and people into major eras to identify and explain historical relationships.

1.1 Students know the general chronological order of events and people in history.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- chronologically organizing significant events, groups, and people in the history of Pennsylvania.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- chronologically organizing major events and people of United States history; and
- describing significant events and people which form the foundation of United States history in the chronological context of the history of the Americas and the world

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- identifying events and people that characterize each of the major eras in United States and world history (listed below)

#### Eras in United States

The Americas to 1600

The Colonial Era, 1500 – 1754

The Revolutionary Era, 1754 – 1783

Nation Building, 1783 - 1815

The Expanding Nation, 1815 - 1850 600 AD - 1450 AD

Civil War and Reconstruction, 1850 - 1877

Development of the Industrial

United States, 1865 -1914

The Progressive Era, 1890 - 1914

Emergence of the United States as a World Power, 1890 - 1920

The 20's: Prosperity & Problems

Depression and New Deal, 1929 - 1941

World War II and Post War United States, 1939-1961

Contemporary United States, 1961 – Present

#### History Eras in World History

Emergence of Civilizations, to 1000 BC

The Classical Civilizations of the Mediterranean Basin, India, and China, 1000 BC - 600 AD

The Expansion and Interaction of Civilizations, 600 AD - 1450 AD

The Early Modern World, 1450-1800

The World in the 19th Century

The World in the Contemporary Era

1.2 Students use chronology to organize historical events and people.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- creating timelines that show people and events in sequence using days, weeks, months, years, decades, and centuries; and
- creating a brief historical narrative that chronologically organizes people and events in the history of their family heritage, school, neighborhood, local community, or Pennsylvania.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying examples of how various cultures\* have used calendars to organize and measure time; • constructing tiered timelines to show how different series of events happened simultaneously; and
- illustrating the time structure of events in historical narratives.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- reconstructing the time structure and identifying connections found in historical narratives;
- using timelines to organize large quantities of historical information, compare different time periods and places, and answer historical questions; and
- describing how history can be organized, using various criteria (for example, thematically, chronologically, geographically) to group people and events

1.3 Students use chronology to examine and explain historical relationships.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying cause-and-effect relationships in a sequence of events.

#### GRADES 5-8

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As students in grades 5-8 extend their knowledge, what they know and are able to do includes

- interpreting historical data to determine cause-effect and time-order relationships; and
- explaining patterns and identifying themes in related events over time

### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- distinguishing between cause-and-effect relationships and events that happen or occur concurrently or sequentially;
- analyzing and explaining cause-and-effect relationships using historical information that is organized chronologically; and
- using both chronological order and the duration of events to detect and analyze patterns of historical continuity and change

STANDARD 2: Students know how to use the processes and resources of historical inquiry.

### GRADES K-4

In grades K-4, what students know and are able to do include...

- posing and answering questions about the past; and
- gathering historical data from multiple sources (for example, oral histories, interviews, diaries, letters, newspapers, literature, speeches, texts, maps, photographs, art works, and available technology).

### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do Include...

- formulating historical questions based on examination of primary\* and secondary\* sources including documents, eyewitness accounts, letters and diaries, artifacts, real or simulated historical sites, charts, graphs, diagrams, and written texts;
- gathering information from multiple sources, including electronic databases, to understand events from multiple perspectives; and
- determining if the information gathered is sufficient to answer historical questions.

### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- formulating historical hypotheses from multiple, historically objective perspectives, using multiple sources; and

- gathering, analyzing, and reconciling historical information, including contradictory data, from primary and secondary sources to support or reject hypotheses

2.2 Students know how to interpret and evaluate primary and secondary sources of historical information.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- describing sources of historical information;
- identifying the main idea in a source of historical information; and
- identifying ways different cultures record their history.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- distinguishing between primary and secondary sources;
- interpreting the data in historical maps, photographs, art works, and other artifacts; and
- examining data for point of view, historical context, bias, distortion, or propaganda.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do includes

- explaining how historical descriptions, arguments, and judgments can reflect the bias of the author and/or the prevailing ideas of the culture and time period;
- interpreting oral traditions and legends as “histories”;
- evaluating data within the social, political, and economic context in which it was created, testing its credibility, and evaluating its bias; and
- comparing and contrasting the reliability of information received from multiple sources.

2.3 Students apply knowledge of the past to analyze present-day issues and events from multiple, historically objective perspectives.

#### GRADES K-4

In grades K-4, what students know and are able to do includes • comparing past and present-day situations and events.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- examining current concepts, issues, events, and themes from multiple, historical perspectives

## GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- identifying historical contexts of contemporary issues;
- identifying how print and electronic media can affect perspectives regarding historical events; and
- using historical information to interpret and evaluate decisions or policies regarding contemporary issues.

STANDARD 3: Students understand that societies are diverse and have changed over time.

3.1 Students know how various societies were affected by contacts and exchanges among diverse peoples.

## GRADES K-4

In grades K-4, what students know and are able to do includes

- recognizing how the presence, interactions, and contributions of various groups and cultures have affected the school, neighborhood, community, and state; and
- describing the history, interactions, and contributions of the various peoples and cultures that have lived in or migrated to the area that is now Pennsylvania (for example, African-Americans, Asian Americans, European Americans, Latino Americans, and Native Americans).

## GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing the common traits and characteristics that unite the United States as a nation and a society;
- describing the history, interactions, and contributions of the various peoples and cultures that have lived in or migrated, immigrated, or were brought to the Western Hemisphere;
- describing the history, interactions, and contributions of various groups of people who make up the major culture regions of the world; and
- explaining how the cultures of the earliest civilizations spread and interacted (for example, the civilizations of the river valleys of India, Africa, Mesopotamia, and Mesoamerica).

## GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- describing the interactions and contributions of the various peoples and cultures that have lived in or migrated, immigrated, or were brought to the area that is now the United States, including African, Asian, European, Latino, and Native American;
- describing and explaining the circumstances under which past and current societies have interacted and changed, resulting in cultural diffusion (for example, trade, war, exploration, imperialism, social disruptions, improvements in communication, and transportation);
- explaining the reasons for major periods of immigration to the United States and describing how different segments of U.S. society reacted and changed; and
- describing the demographic changes resulting from major migrations in history (for example, migration of Chinese south; Islamic nomads into Northern India; Germanic migrations into the Roman Empire; Bantu migrations south; Amer-Indian migrations into Central America; trans-Pacific migration).

3.2 Students understand the history of social organization in various societies.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying reasons for living in social groups;
- describing important components of the cultural heritage of the United States; and
- recognizing that there are families and cultures around the world.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing and giving examples of basic elements of culture and social organization;
- explaining how forces of tradition have acted to maintain elements of social organization throughout history;
- comparing how roles of people have differed throughout history based on various factors (for example, gender, age, caste, racial identity, wealth, and/or social position); and
- describing how social roles and the characteristics of social organization have both changed and endured in the United States throughout its history (for example, family structures, community structures).

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining how societies are maintained when individuals see benefits and fulfill obligations of membership;
- analyzing how forces of tradition and change have influenced, altered, and maintained social roles and the social organization of societies throughout history;

- explaining how, throughout history, social organization has been related to distributions of privilege and power; and
- describing how societies have become increasingly complex in responding to the fundamental issues of social organization.

STANDARD 4: Students understand how science, technology, and economic activity have developed, changed, and affected societies throughout history.

4.1 Students understand the impact of scientific and technological developments on individuals and societies.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- comparing the lives of hunters and gatherers to the lives of people who cultivated plants and raised domesticated animals for food;
- describing the impact of various technological developments on the local community and the state (for example, irrigation, transportation, communication); and
- identifying individual achievements of scientists and inventors from many cultures and describing their achievements (for example, the Persian scientist and mathematician who invented equations and coined the term “algebra”; Johann Gutenberg and the printing press; Galileo and the telescope; Isaac Newton and the theory of gravity; Eli Whitney and the cotton gin; Marie Curie and radiation).

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining the significance of the achievements of individual scientists and inventors from many cultures (for example, the impact of germ theory on medical practice and sanitation; the impact of the steamship on transportation and trade; the impact of the printing press on who had access to books and knowledge).
- describing and explaining how industrialization influenced the movement of people (for example, to and from urban, suburban, and rural areas);
- identifying and explaining the consequences of scientific and technological changes (for example, navigation, transportation, printing, weaponry, agriculture, communication, and medicine); and
- relating differences in technology to differences in how people live in various regions of the world.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing the major technological turning points in history (for example, agricultural revolution, revolutions in transportation, industrial revolution);

- explaining how the scientific revolution affected how people lived in and viewed the world;
- describing and explaining the social and economic changes that resulted from industrialization; and
- analyzing the impact of rapid developments in areas such as transportation, technology, and telecommunications on individuals and the world today.

4.2 Students understand how economic factors have influenced historical events.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- describing the economic reasons why people move to or from a location (for example, explorers, nomadic people, miners, traders).

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining how the economy of the Western United States has historically depended upon natural resources and how this has affected the region;
- explaining how economic factors influenced historical events in the United States and in various regions of the world
- explaining how societies are and have been linked by economic factors.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- describing how systems of exchange and other economic developments influenced the growth and history of civilizations;
- explaining how economic changes led to the growth of towns, cities, and eventually, the modern nation-state; and
- analyzing the relationship between economic factors and social and political policies throughout United States history;
- explaining how the rise and expansion of trade have connected and affected the history of regions of the world; and
- describing modern historical developments in economic interdependence (for example, the emergence of the Pacific Rim, NAFTA, the European Union), and their impact on individuals and societies.

4.3 Students understand the historical development and know the characteristics of various economic systems.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- giving examples of different ways that decisions are made regarding how resources are utilized and distributed (for example, authority, sharing, competition in a free market, tradition, “first-come, first-served”, “luck of the draw”); and
- describing different systems of exchange that can be used (for example, barter, money).

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing the general characteristics of economic systems (for example, scarcity, growth, distribution of goods and services, production, and consumption); and
- describing historical events and individuals in the economic development of the United States

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining the historical development of the economic system of the United States;
- analyzing the history of the relationship between economics systems and the role of governments throughout history;
- describing characteristics of specific economic systems and how these systems have existed in different ways at different times throughout history (for example, manorialism, mercantilism, capitalism, socialism, communism); and
- tracing the historical factors that lead to the transition from local and regional economies to a globally interdependent economy.

STANDARD 5: Students understand political institutions and theories that have developed and changed over time.

5.1 Students understand how democratic ideas and institutions in the United States have developed, changed, and/or been maintained.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying historical figures from diverse backgrounds in the United States who have advanced the rights of individuals and promoted the common good;
- explaining the importance of national celebrations, symbols, and ideas in their historical context; and
- describing the historical background of the Pennsylvania constitution.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining the historical development of democratic governmental principles and institutions;
- describing the basic ideas set forth in the Declaration of Independence, Articles of Confederation, Constitution, and Bill of Rights; and
- giving examples of extensions and restrictions of political and civil rights in United States history.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- identifying and explaining the role of the ideas expressed in the documents that influenced the development of constitutional democracy (for example, Magna Carta, English Bill of Rights, Mayflower Compact);
- analyzing how the ideas set forth in the Declaration of Independence, Constitution and Bill of Rights, Federalist Papers, and landmark Supreme Court cases affect and operate in the contemporary United States;
- identifying and analyzing how historical events have affected the organization of the political system of the United States (for example, the American Revolution, the Civil War, the Mexican War, the Populist and Progressive Movements); and
- analyzing how the United States' political system has dealt with various constitutional crises (for example, the Civil War, Alien-Sedition Acts, assassinations, Watergate).

5.2 Students know how various systems of government have developed and functioned throughout history.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- explaining why rules and laws have been established and enforced in schools, communities, states, and nations; and
- giving examples of different heads of government (for example, presidents, kings, mayors, governors).

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying the ancient and medieval roots of governmental principles and institutions (for example, Hammurabi's Code, Roman Republicanism, Mosaic Law, Greek Democracy, Islamic Law);
- describing the basic forms of government, and giving examples of societies that have practiced them (for example, monarchy, oligarchy, clan/tribal, autocracy, dynasties, theocracy, republic, democracy); and
- describing how various other nations have pursued, established, and maintained democratic forms of government.

## GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- comparing and contrasting the characteristics and effects of the various political systems that developed throughout history (for example, republics, representative and direct democracy, feudalism, centralized monarchy, absolutism, principalities, imperial dynasties, tribal kingdoms);
- comparing and contrasting the political traditions of Western Hemisphere nations;
- describing the characteristics and ideas of various modern political systems, and giving examples of nations that have used them (for example, democracy, fascism, and communism); and
- explaining why nation-states developed throughout the world and became the dominant form of contemporary political organization.

5.3 Students know how political power has been acquired, maintained, used, and/or lost throughout history.

## GRADES K-4

In grades K-4, what students know and are able to do include...

- giving examples of how individuals in various groups have gained, lost, or maintained political rights, freedoms, power, or cultural identity in the history of the community, region, or state.

## GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing how attributes of various people have affected their individual political rights (for example, gender, racial identity, national origin, property ownership, religion, legal status);
- describing how military and/or economic expansion resulted in the assumption or seizure of political power throughout history; and
- describing how forms of involuntary servitude have been used to maintain and expand political power throughout history (for example, slavery, serfdom, impressment).

## GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining how military conquest and invasion have been used to assume, maintain, and extend political power throughout history;
- analyzing the impact of major revolutions on the realignment of political power throughout the modern world;

- analyzing how genocide has been used to acquire or maintain political power;
- describing how the development, expansion, and collapse of empires throughout history has affected the extension of political power;
- describing and analyzing the major events in the expansion of the political power of the United States (for example, the American Revolution, the Louisiana Purchase, the Mexican War);
- analyzing the causes and events of major wars of the contemporary era and the resulting changes in the distribution of political power (for example, World War I, World War II, War in Vietnam, the Russian Invasion of Afghanistan); and
- giving examples of former colonies and dependent states throughout the world that have gained independence in the 20th century, and explaining how they have addressed the political issues related to independence.

5.4 Students know the history of relationships among different political powers and the development of international relations.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- giving examples of how members of families and communities depend on each other; and
- giving examples of how states and regions have become interdependent.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing how the relationships between the United States and external political powers developed with the growth of the nation; and
- identifying basic patterns of political alliances in the modern world.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- describing the characteristics of relationships among political entities in the past (for example, monarchies, empires, principalities, city-states, federations);
- explaining how the growth of nationalism affected the relationships among political powers;
- describing the eras of United States diplomacy from the Revolution through the modern period (for example, the Monroe Doctrine, the domino theory, detente);
- explaining how the foreign policy of the United States and other nations continues to develop and change; and
- analyzing the development of and issues associated with worldwide movements and organizations such as the League of Nations, the United Nations, and Amnesty International.

STANDARD 6: Students know that religious and philosophical ideas have been powerful forces throughout history.

6.1 Students know the historical development of religions and philosophies.

GRADES K-4

In grades K-4, what students know and are able to do include...

- recognizing that people develop traditions that transmit their beliefs and ideas (for example, marriage ceremonies, feasts, naming of infants).

GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing religious traditions of various ethnic groups in the United States;
- describing religious developments in United States history (for example, the Puritans, the Great Awakening, the Christian Abolitionists, the Mission System, the Mormon Trek, the founding of utopian religious communities); and
- describing different religious concepts that have developed throughout history (for example, monotheism and polytheism).

GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- describing basic tenets of world religions that have acted as major forces throughout history including, but not limited to, Buddhism, Christianity, Hinduism, Islam, and Judaism;
- tracing the history of how principal world religions and belief systems developed and spread;
- explaining how, throughout history, conflicts among peoples have arisen because of different ways of knowing and believing; and
- describing basic ideas of various schools of philosophy that have affected societies throughout history (for example, rationalism, idealism, liberalism, conservatism).

6.2 Students know how societies have been affected by religions and philosophies.

GRADES K-4

In grades K-4, what students know and are able to do include...

- giving examples of how the beliefs of people are reflected in the celebrations and practices of their community.

GRADES 5-8

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As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- giving examples of how religious and philosophical beliefs have defined standards of right and wrong, good and evil, and justice and injustice; and
- giving and describing examples of individuals who, throughout history, acted from their religious or philosophical beliefs

### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- giving examples of how religion and philosophical beliefs have influenced various aspects of society throughout history;
- explaining how, throughout history, the power of the state has been both derived from religious authority and/or in conflict with religious authority;
- explaining how the focus on individualism and reason expressed in Western philosophy has affected the history of Western culture, including the history of the United States; and
- explaining how the beliefs expressed in Eastern philosophy and religion have affected the history of Eastern cultures.

6.3 Students know how various forms of expression reflect religious beliefs and philosophical ideas.

### GRADES K-4

In grades K-4, what students know and are able to do includes

- giving examples of forms of expression that depict the history, daily life, and beliefs of various peoples (for example, folk tales, ballads, dance, and architecture).

### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing how societies have used various forms of visual arts, dance, theater, and music to express their religious beliefs and philosophical ideas throughout history;
- giving examples of the unique art forms that characterize the various ethnic groups in the United States and the religious or philosophical ideas they express;
- explaining how stories, myths, and other forms of literature and oral traditions reflect the beliefs of cultures and societies; and
- explaining the religious or philosophical significance of structures such as pyramids, cathedrals, and burial mounds.

### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining from an historical context why artistic and literary expression have often resulted in controversy; and
- giving examples of the visual arts, dance, music, theater, and architecture of the major periods of history and explaining what they indicate about the values and beliefs of various societies

## GEOGRAPHY

1. Students know how to use and construct maps, globes, and other geographic tools to locate and derive information about people, places, and environments.
2. Students know the physical and human characteristics of places, and use this knowledge to define and study regions and their patterns of change.
3. Students understand how physical processes shape Earth’s surface patterns and systems.
4. Students understand how economic, political, cultural, and social processes interact to shape patterns of human populations, interdependence, cooperation, and conflict.
5. Students understand the effects of interactions between human and physical systems and the changes in meaning, use, distribution, and importance of resources.
6. Students apply knowledge of people, places, and environments to understand the past and present and to plan for the future.

STANDARD 1: Students know how to use and construct maps, globes, and other geographic tools to locate and derive information about people, places, and environments.

1.1 Students know how to use maps, globes, and other geographic tools to acquire, process, and report information from a spatial perspective.

### GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying the characteristics and purposes of maps, globes, and other geographic tools;
- reading and interpreting information from photographs, maps, globes, graphs, models, and computer programs, if available; and
- displaying information on maps, globes, and geographic models, and in graphs, diagrams, and charts (for example; designing map keys and legends).

### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining the characteristics and purposes of and explaining differences among maps, globes, aerial photographs, geographic models, and satellite images;
- identifying several basic types of map projections (for example, Mercator and Robinson Projections); and
- interpreting and constructing maps, globes, models, charts, and geographic databases

## GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- selecting appropriate maps, map projections, and other graphic representations to analyze geographic problems;
- constructing maps using fundamental cartographic principles including translating narratives about places and events into graphic representations;
- interpreting maps and other geographic tools, through the analysis of case studies and using data; and
- using geographic tools to represent and interpret Earth's physical and human systems.

1.2 Students develop knowledge of Earth to locate people, places, and environments.

## GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying major geographic features;
- locating places within their own and nearby communities in Pennsylvania;
- locating Pennsylvania in relation to the U.S. and the rest of the world;
- drawing a map of continents and oceans; and
- identifying a specific location on a map using grids.

## GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying and locating each of the fifty states in the United States;
- drawing an accurate map from memory to answer questions about the location of physical and human features (for example, given an incomplete map of Europe and Africa, sketch in the borders of the countries around the Mediterranean Sea);
- identifying and locating physical and human features in their own and nearby communities, in the United States, and in regions of the world; and
- locating places using latitude and longitude.

## GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- drawing a complex and accurate map from memory to answer questions about the location of human and physical features;
- identifying and locating physical and human features in their own and nearby communities, in the United States, and in regions of the world (for example, rivers, mountains, regions, and countries); and

- analyzing maps people make from memory of the same place to determine similarities and differences.

1.3 Students know how to analyze the dynamic spatial organization of people, places, and environments.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- defining basic geographic vocabulary such as the concepts of location, direction, distance, scale, movement, and region using appropriate words and diagrams;
- describing how places are connected by the movement of goods and services, ideas and people; and
- making and defending locational decisions for human activity (for example, where one would locate a new piece of playground equipment)

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining fundamental geographic vocabulary such as the concepts of distance, latitude, longitude, interdependence, accessibility, and connections;
- analyzing the factors affecting the location of human activities (for example, the location of a planned development or dam);
- explaining different land use patterns in urban, suburban, and rural areas;
- describing patterns and processes of diffusion (for example, information networks around the world); and
- solving locational questions requiring the integration of information from two or more sources

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing geographic information using a variety of scales--local, national, international (for example, growth issues in Limon, New York City, and Southeast Asia);
- analyzing patterns of distribution and arrangement of settlements; and
- analyzing patterns and processes of the diffusion of human activities

**STANDARD 2:** Students know the physical and human characteristics of places, and use this knowledge to define and study regions and their patterns of change.

2.1 Students know the physical and human characteristics of places.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying and classifying the characteristics of places as human or physical; and
- describing how human and physical processes together shape places

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing human and physical characteristics of places; and
- explaining how places change due to human activity (for example, center-pivot technology produces a distinctive pattern of irrigation on the High Plains).

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing the human and physical characteristics that give a place meaning and significance; and
- describing the changing human and physical characteristics of places.

2.2 Students know how and why people define regions.

#### GRADES K-4

In grades K-4, what students know and are able to do includes

- identifying a region as an area with unifying geographic characteristics; and
- describing similarities, differences, and patterns of change in regions

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying a region by defining its distinguishing characteristics;
- explaining how and why regions change;
- describing the relationships and interactions among regions; and
- analyzing the influences and effects of regional labels and images (for example, the Sun Belt states attract tourists, retirees, and new businesses).

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- applying the concept of region to organize the study of a geographic issue using multiple criteria; and

- analyzing changes in regions and recognizing the patterns of those changes (for example, the Caribbean Basin’s transition from a major sugarcane producer to a center for tourism)

2.3 Students know how culture and experience influence people's perceptions of places and regions.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying ways in which different people view and relate to places and regions.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing various perspectives associated with places and regions;
- explaining how culture and technology affect perception\* of places and regions (for example, U.S. television programs and movies present images of the U.S. to billions of people around the world); and
- explaining how places and regions serve as cultural symbols (for example, Jerusalem as a sacred place for Christians, Jews, and Muslims).

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing why places and regions are important to human identity;
- comparing and contrasting how and why different groups in society view places and regions differently; and
- analyzing the ways places and regions reflect cultural change (for example, old mining towns become tourist centers).

STANDARD 3: Students understand how physical processes shape Earth’s surface patterns and systems.

3.1 Students know the physical processes that shape Earth’s surface patterns.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying the components of Earth's physical systems and their characteristics (for example, air, land, water, plants, and animals and their features);
- explaining how Earth-Sun relationships shape climate and vegetation patterns (for example, as compared with other regions, polar regions receive low amounts of sun’s energy and thus support little vegetation); and

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- describing how features on Earth's surface are shaped by physical processes (for example, wet regions have many rivers).

### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing how physical processes shape environmental patterns of air, land, water, plants, and animals;
- explaining how physical processes influence the formation and location of resources;
- describing the consequences of physical processes on Earth's surface (for example, tropical ocean heating supplies energy for hurricanes); and
- explaining how Earth-Sun relationships produce day and night, time zones, seasons, and major climatic variations.

### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- identifying the dynamics of the four basic components of Earth's physical systems: the atmosphere, biosphere, lithosphere, and hydrosphere;
- explaining the interaction of Earth's physical systems (for example, the interaction of climate and ocean water as exemplified by El Niño); and
- explaining the variation in the effects of physical processes across Earth's surface (for example, the effects of wind variations in shaping landforms).

3.2 Students know the characteristics and distributions of physical systems of land, air, water, plants, and animals.

### GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying characteristics of physical systems (for example, water cycle);
- describing local environmental features and identifying the physical system to which they belong (for example, a lake which is part of the water cycle); and
- comparing patterns and distribution of environments within a physical system (for example, groups of plant and animal life found in Pennsylvania).

### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying the local and world patterns of ecosystems\*; and
- describing how ecosystems work.

### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining the factors that affect the distribution and characteristics of ecosystems;
- explaining the importance of ecosystems in understanding the environment; and
- analyzing the diversity and productivity of ecosystems

STANDARD 4: Students understand how economic, political, cultural, and social processes interact to shape patterns of human populations, interdependence, cooperation, and conflict.

4.1 Students know the characteristics, location, distribution, and migration of human populations.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying the distribution of population, both locally and in other parts of the world;
- identifying the characteristics of populations, both locally and in other parts of the world; and
- identifying the causes of human migration.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing the demographic structure of a population (for example, the age-sex structure as shown in a population pyramid);
- explaining reasons for variation in population distribution; and
- analyzing the causes and types of human migration and its effect on places.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- evaluating trends and effects of world population numbers and patterns; and
- analyzing the physical and cultural impact of human migration.

4.2 Students know the nature and spatial distribution of cultural patterns.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying how the elements of culture affect the ways in which people live; and
- describing how patterns of culture vary across Earth's surface (for example, using thematic maps to show patterns of language, religion, and housing types in a community).

GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining the spatial distribution of cultures, both locally and in other parts of the world;
- describing how cultures and cultural landscapes\* change; and
- comparing and contrasting elements of different cultural landscapes.

GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing how cultures shape the character of a region;
- describing the processes of cultural diffusion; and
- describing the effect of technology on the development and change of cultures.

4.3 Students know the patterns and networks of economic interdependence.

GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying the location and distribution of major economic activities in Pennsylvania; and
- describing economic networks used in daily life (for example, transportation and communication networks)

GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying the factors that influence the location and distribution of economic activities;
- explaining why and how countries trade goods and services;
- explaining reasons for patterns of economic activities on Earth's surface; and
- explaining how changes in technology, transportation, communication, and resources affect the location of economic activities.

GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- comparing and contrasting the characteristics and distribution of economic systems;
- explaining how places of various size function as centers of economic activity;
- analyzing factors influencing economic interdependence of countries, including world trade;

- analyzing connections among local, regional, and world economies (for example, transportation routes, movement patterns, and market areas); and
- analyzing how and why levels of economic development vary among places.

4.4 Students know the processes, patterns, and functions of human settlement.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- classifying the types and patterns of settlements;
- identifying the factors that affect where people settle (for example, the availability of transportation and resources); and
- describing the spatial characteristics of cities (for example, residential, recreational, central business district, industrial, commercial areas).

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining the causes and effects of urbanization\* (for example, rural-to-urban migration leads to urbanization); and
- describing, locating, and comparing different settlement patterns throughout the world.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing the size, arrangement, structure, and function of urban areas;
- comparing and contrasting the differing characteristics of settlement in developing and developed countries; and
- examining how and why large cities grow together.

4.5 Students know how cooperation and conflict among people influence the division and control of Earth's surface.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- describing how and why people create boundaries; and
- describing how cooperation and conflict affect neighborhoods and communities.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing how cooperation and conflict among people contribute to political, economic, and social divisions of Earth's surface; and
- describing the forces and processes of cooperation that unite people across Earth's surface (for example, the nations of Western Europe have joined together in the European Union).

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing why and how cooperation and conflict are involved in shaping the distribution of social, political, and economic spaces on Earth at different scales – local, national, and international; and
- analyzing how differing points of view and self-interests play a role in conflict over territory and resources.

STANDARD 5: Students understand the effects of interactions between human and physical systems and the changes in meaning, use, distribution, and importance of resources.

5.1 Students know how human actions modify the physical environment.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- identifying how people depend upon, adapt to, and modify the physical environment.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing how human modifications of physical environments in one place often lead to changes in other places;
- explaining the role of technology in the human modification of the physical environment; and
- describing ways that humans depend upon, adapt to, and affect the physical environment.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include.

- analyzing ways the humans depend upon, adapt to, and affect the physical environment;
- evaluating ways in which technology has expanded human capacity to modify the physical environment; and

- explaining the possible global effects of human modification of the physical environment.

5.2 Students know how physical systems affect human systems.

#### GRADES K-4

In grades K-4, what students know and are able to do includes

- describing how the physical environment provides opportunities for and places constraint on human activities

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining how the characteristics of different physical environments provide opportunities for or place constraints on human activities; and
- describing how natural hazards affect human activities.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- comparing and contrasting how changes in the physical environment can increase or diminish its capacity to support human activity;
- identifying and evaluating alternative strategies to respond to constraints placed on human systems by the physical environment (for example, the use of irrigation in arid environments); and
- analyzing how humans perceive and react to natural hazards.

5.3 Students know the changes that occur in the meaning, use, location, distribution, and importance of resources.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- describing the role of resources in daily life (for example, discussing the recycling of materials);
- identifying the characteristics of renewable and nonrenewable resources; and
- identifying the spatial distribution of resources.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing the role of resources in daily life (for example, discussing the recycling of materials);
- describing the worldwide distribution and use of resources;
- identifying how technology affects the definition of, access to, and use of resources;
- describing why people have different viewpoints with respect to resource use;
- explaining the fundamental role of energy resources; and
- describing ways that resources can be recycled.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing how the changing distribution of resources affects the patterns of settlement;
- evaluating policies and programs for resource use and management; and
- analyzing the effects of economic activity in modifying and transforming resources.

STANDARD 6: Students apply knowledge of people, places, and environments to understand the past and present and to plan for the future.

6.1 Students know how to apply geography to understand the past.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- describing how places change over time; and
- describing how places and environments may have influenced people and events over time.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing changes in the spatial organization of a society over time;
- describing how places and environments have influenced events and conditions in the past; and
- explaining how differing perceptions of places, people, and resources have affected events and conditions in the past.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing how changing perceptions of places and environments affect the behavior of people; and
- analyzing the fundamental role that places and environments have played in history (for example, the Russian winter played an important part in the defeat of Napoleon's army).

6.2 Students know how to apply geography to understand the present and plan for the future.

#### GRADES K-4

In grades K-4, what students know and are able to do include...

- describing issues in communities from a spatial perspective; and
- identifying personal behaviors that can affect community planning.

#### GRADES 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining issues in communities from a spatial perspective; and
- explaining a contemporary issue using geographic knowledge, skill and perspectives.

#### GRADES 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- evaluating a contemporary issue using geography knowledge, skills, and perspectives; and
- comparing and contrasting how different viewpoints influence the development of policies designed to use and manage Earth's resources

### ECONOMICS

1. Students understand that because of the condition of scarcity, decisions must be made about the use of resources.
2. Students understand how different economic systems impact decisions about the use of resources and the production and distribution of goods and services.
3. Students understand the results of trade, exchange, and interdependence among individuals, households, businesses, governments, and societies.

STANDARD 1: Students understand that because of the condition of scarcity, decisions must be made about the use of scarce resources.

1.1 Students know that economic choices are made because resources are scarce and that the act of making economic choices imposes opportunity costs.

#### Grades K-4

In grades K-4, what students know and are able to do include...

- identifying goods and services and giving examples of each;

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- showing what happens when there are limited resources and unlimited wants and needs; and
- giving an example of the opportunity cost for an individual decision (for example, choosing to use money to go to the movies may result in not having enough money to eat at a restaurant).

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- giving examples of situations where households, businesses, governments, and societies deal with scarcity just as individuals do;
- identifying types of scarce productive resources and giving examples of each;
- identifying opportunity costs that individuals, households, businesses, governments, and societies incur when making decisions involving the use of scarce resources; and
- explaining that few economic choices are all-or-nothing propositions and that most economic choices involve tradeoffs.

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining how economic choices made by individuals, households, businesses, governments, and societies impose opportunity costs on societies as a whole; and
- analyzing the relationship between economic goals and the allocation of scarce resources.

1.2 Students understand that economic incentives influence the use of scarce human, capital, and natural resources.

### Grades K-4

In grades K-4, what students know and are able to do include...

- giving examples of different economic incentives (for example, landowners are paid rent for the use of their land, people who work are paid a wage, people who save money are paid interest, and successful businesses such as a lemonade stand make a profit).

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- analyzing how economic incentives influence how individuals, households, businesses, governments, and societies use their scarce resources; and
- identifying different economic goals and giving examples of the tradeoffs among economic goals.

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing how economic incentives influence the economic choices made by individuals, households, businesses, governments, and societies to use scarce human, capital, and natural resources more efficiently to meet their economic goals.

1.3 Students understand that resources can be used in many ways and understand the costs of alternative uses.

### Grades K-4

In Grades K-4, what students know and are able to do include...

- describing how consequences of economic choices may affect the future (for example, using allowance money today for ice cream and candy will not generate savings for a bike in the future); and
- identifying similar resources that can be used in a variety of ways (for example, a piece of vacant land can be used to build a office building, a park, a parking lot, a shopping mall or a soccer field).

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying costs and benefits associated with the use of resources to produce goods and services (for example, using a gas lawnmower involves the cost of gas and upkeep, but provides the benefit of mowing the lawn faster);
- identifying externalities associated with the use of resources; (for example, using a gas mower creates noise pollution in a neighborhood, but also provides an attractive lawn);
- explaining how the use of specific resources will influence the availability of other resources in the future;
- identifying choices individuals, households, businesses, governments, and societies make that impact productivity and the future (for example, choices about the division of labor, the investment in human and physical capital, specialization, and using technology).

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining how changes in the investment of resources and specialization by individual, households, businesses, governments, and societies affect productivity (for

example, a firm's investment in training enables its individual workers to produce more.)

- analyzing the costs of alternative uses of resources with respect to present and future productivity; and
- analyzing how the use of technology and the investment in human and physical capital can affect long-range productivity;
- identifying personal investment strategies for different economic goals, such as retirement, a child's education, or saving for a new house (students should be familiar with the risk-reward level of various types of investments, how risk is matched with the time horizon of the need for the funds invested, and how mutual funds work).

STANDARD 2: Students understand how different economic systems impact decisions about the use of resources and the production and distribution of goods and services.

2.1 Students understand that different economic systems employ different means to produce, distribute, and exchange goods and services.

Grades K-4

In grades K-4, what students know and are able to do include...

- identifying the three basic economic questions all economic systems must answer: (What goods and services will be produced? How will they be produced? For whom will they be produced?); and
- identifying different economic systems (for example, command, market, and traditional).

Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing the characteristics of a traditional, command, market, and mixed economic system;
- explaining how different economic systems use different means to produce, distribute, and exchange goods and services;
- describing how different economic systems affect the allocation of resources (for example, steel production in the former Soviet Union was determined by economic planners. This affected the allocation of many resources: coal, labor, etc. In the United States, all of these resources are allocated by the market).

Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- comparing and contrasting economic systems in terms of their ability to achieve economic goals; and
- explaining the benefits of the United States economic system.

## 2.2 Students understand the fundamental characteristics of the United States economic system

### Grades K-4

In grades K-4, what students know and are able to do include...

- describing roles of consumers\* and producers\* in the U.S. economic system; and
- describing how the price of goods and services in our U.S. economic system is related to how much of a product or resource there is, and how many people want it.

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing the relationships among supply,\* demand,\* and price,\* and the role these elements play in the U.S. economic system;
- describing how prices act as signals to producers and consumers to answer the three basic economic questions: (What goods and services to produce? How will they be produced? For whom will they be produced?);
- identifying how fundamental characteristics of the U.S. economic system (for example, competition, the price system, private property, and profits) influence economic decision making; and
- describing the characteristics that make the United States economy a mixed economy.

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining how businesses, including sole proprietorships, partnerships, corporations, and franchises, are organized and financed in the U.S. economy;
- describing how changes in income, tastes, and preferences, and the prices of substitutes and complements can cause changes in demand;
- describing how changes in the number of producers, production costs, or the prices of substitute and complementary products cause changes in supply; and
- comparing and contrasting the characteristics of different market structures, including pure competition, oligopoly, monopoly, and monopolistic competition.

## 2.3 Students understand that government actions and policies, including taxes, spending, and regulations influence the operation of economies.

### Grades K-4

In grades K-4, what students know and are able to do include...

- recognizing that some goods and services are provided by the government (for example, firefighters, parks, police, and public schools); and

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- explaining that government raises revenue by taxing and borrowing to pay for the goods and services it provides.

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying governmental activities that affect the local, state, or national economy; and
- giving examples of the role of government in a market economic system, (for example, the government enforces property rights, provisions of contracts and provides a standardized monetary system).

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- interpreting measurements of inflation rates and unemployment rates and relating these to the general economic "health" of the national economy;
- explaining the impact of government taxing and spending decisions on specific individuals, households, businesses, governments, and societies (for example, social security and Small Business Administration, national debt);
- comparing and contrasting different types of taxes, including progressive, regressive, and proportional taxes;
- describing the economic roles of government, such as establishing fiscal policy, providing public goods and services, maintaining competition, generating and using revenues, promoting employment, stabilizing prices, and sustaining reasonable rates of economic growth ( for example, Medicaid, and public education); and
- describing the effects of specific government regulations on different groups, including consumers, employees, and businesses ( for example, unfunded mandates); and
- contrasting the concept of customer and consumer.

STANDARD 3: Students understand the results of trade, exchange, and interdependence among individuals, households, businesses, governments, and societies.

3.1 Students understand that the exchange of goods and services creates economic interdependence and change.

### Grades K-4

In grades K-4, what students know and are able to do include...

- describing how voluntary exchange of goods and services affects all parties involved in the exchange (for example, by exchanging clothing for food both parties in the exchange have benefited);
- describing the interdependence between households and businesses; and

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- describing how the exchange of goods and services around the world creates interdependence among people in different places (for example, the production of a candy bar requires ingredients from around the world).

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing the relationship among trade, specialization, and interdependence; and
- describing how economic interdependence between countries around the world affects the standard of living.

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- giving examples of international differences in resources, productivity, and prices that provide a basis for international trade;
- describing the factors that lead to a nation having a comparative advantage in trade;
- explaining effects of domestic policies on international trade;
- explaining why nations often restrict trade by using quotas, tariffs, and non-tariff barriers\* to trade (for example, cars entering the U.S. must have a catalytic converter); and
- comparing and contrasting the characteristics of free trade and restricted trade (Example: Embargo).

3.2 Students understand how a country's monetary system facilitates the exchange of resources.

### Grade K-4

In grades K-4, what students know and are able to do include...

- giving examples of barter as a simple form of exchange;
- explaining the concept of money;
- giving examples of the mediums of exchange in the U.S.; and
- recognizing that different countries use different currencies.

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining that money can be used to express the market value of goods and services in the form of prices;
- describing the role of banks in the monetary system;
- recognizing that the use of credit involves the use of someone else's money at a certain interest rate; and

- explaining an exchange rate;
- describing the difference between wealth and money.

#### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining the costs and benefits of the use of credit;
- describing the use of monetary and fiscal policies; and
- describing how fiscal or monetary policies can affect exchange rates and international trade.

### CIVICS

1. Students understand the purposes of government, and the basic constitutional principles of the United States republican form of government.
2. Students know the structure and function of local, state, and national government and how citizen involvement shapes public policy.
3. Students know the political relationship of the United States and its citizens to other nations and to world affairs.
4. Students understand how citizens exercise the roles, rights and responsibilities of participation in civic life at all levels - local, state and national.

STANDARD 1: Students understand the purposes of government, and the basic constitutional principles of the United States republican form of government.

1.1 Students know and understand what government is and what purpose it serves.

#### Grades K-4

In grades K-4, what students know and are able to do include...

- describing the purposes of government;
- describing what life would be like without laws and order; and
- identifying a constitution as a framework for a government.

#### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining major ideas about why government is necessary (for example, promote the common good, protect individual rights, safety, order);
- describing how the United States Constitution limits the power of government; and
- comparing and contrasting various ideas about the purposes of government.

#### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining how purposes of government impact the individual and society;
- analyzing how different forms of government execute the purposes of government; and
- analyzing and knowing how different forms of government impact the individual (for example, personal freedom and political liberty).

1.2 Students know the essential characteristics of limited and unlimited government.

Grades K-4

In grades K-4, what students know and are able to do include...

- giving examples of people using power and people using authority (for example, school crossing guards have authority to direct traffic, while bullies have power, but not authority); and
- explaining why the power of a government should be limited (for example, to limit the misuse or abuse of power).

Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- comparing limited and unlimited government;
- describing different types of government, limited, unlimited and absence of government (for example, anarchy, oligarchy, constitutional republic, authoritarian, democratic and totalitarian); and
- explaining how rule of law differs from arbitrary decisions of a leader.

Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- comparing and contrasting limited and unlimited government (for example, constitutional republic, authoritarian, and totalitarian government);
- comparing how constitutions promote the principles of a political system and provide the basis for government; and
- describing how constitutions and the rule of law may limit government.

1.3 Students understand the principles of the United States constitutional government.

Grades K-4

In grades K-4, what students know and are able to do include...

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- identifying the function of the United States Constitution (for example, establishes the rules of the United States government); and
- giving examples of rights protected by a constitution (for example, U.S. Bill of Rights, the state constitution).

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining the historical foundation of the United States constitutional government (for example, the influence of the Roman Republic, Magna Carta, colonial experience, the Declaration of Independence, Articles of Confederation, the importance of the natural rights philosophy, and social contract);
- explaining the essential principles of government stated in the United States Constitution (for example, the purposes of government as stated in the Preamble, limited government, separation of powers, checks and balances of legislative, executive and judicial branches, federalism and rule of law);
- identifying individual rights protected by the Bill of Rights; and developing and defending positions on current issues involving constitutional protection of individual rights.

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing the political thought that influenced the development of the United States Constitution (for example, social contract theory, the major ideas of republicanism, natural rights philosophy);
- evaluating the Federalist and Anti-Federalist positions in the context of contemporary United States society;
- explaining how the United States Constitution is a vehicle for continuity and preserving liberty, yet allows for change; and
- explaining the conditions which are necessary for the United States constitutional government to operate effectively (for example, the acceptance of or commitment to common constitutional principles).

1.4 Students know the distinctive characteristics of the political culture of the United States.

### Grades K-4

In grades K-4, what students know and are able to do include...

- explaining the importance of respect for individuals, property, rule of law, and civic responsibility.

### Grades 5-8

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As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining how the shared political principles of the United States Constitution affect citizens (for example, shared political principles could be liberty, equality, justice, patriotism, limited government);
- developing, evaluating, and defending positions on how shared political principles have affected citizens;
- analyzing why conflicts arise, and ways in which conflicts can be resolved in a peaceful manner; and
- describing and analyzing the processes that have led to the expansion of rights for more people in the United States (for example, abolition of slavery, women's suffrage, civil rights movement).

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing how amendments, laws, and landmark decisions have helped fulfill the promise of the Constitution;
- analyzing the relationship between the Constitution and the political culture in which it exists;
- developing, evaluating, and defending positions about the importance of adhering to constitutional principles in managing conflicts over diverse viewpoints (for example, taxation, civil rights, and balance of power); and
- developing, evaluating, and defending positions on the effectiveness of the Constitution and Bill of Rights in protecting the rights of all citizens.

1.5 Students know the fundamental democratic principles inherent in the United States concept of a constitutional democratic republic.

### Grades K-4

In grades K-4, what students know and are able to do include...

- identifying traditional ideas of representative government of the United States (for example, individual rights, common or public good, self-government, justice, equality of opportunity); and
- giving examples of traditional principles of representative government of the United States (for example, people are sovereign, government power is limited, exercise of authority directly by voting, indirect authority by representation, majority rule, and minority rights protected).

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

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- explaining the meaning and importance of each of the following traditional principles of representative government - individual rights (for example, the rights to life, liberty, and property), the common good, self-government, justice, and equality; and
- identifying and applying to contemporary situations the fundamental principles of representative government of the United States (for example, rule by consent of the people, representative democracy, rule of law, the importance of citizen participation, limited government, balancing individual and social needs, majority rule and minority rights).

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- developing and defending positions on issues in which traditional principles of representative government are in conflict, using historical and contemporary examples (for example, conflicts between liberty and equality, between individual rights and the common good);
- developing, evaluating, and defending positions about historical and contemporary efforts to act according to constitutional principles (for example, abolition movement, desegregation of schools, civil rights movements); and
- developing, evaluating, and defending positions on contemporary issues on the balance between individual rights and the common good.

STANDARD 2: Students know the structure and function of local, state, and national government and how citizen involvement shapes public policy.

2.1 Students know the organization and functions of local, state, and national governments.

### Grades K-4

In grades K-4, what students know and are able to do includes

- identifying what governments do in their school, community, state, and nation; what services they provide; and how we pay for them.

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining major responsibilities of national, state, and local governments;
- explaining the rationale for taxes and the purposes for which taxes are used;
- identifying their representatives in the legislative branches, heads of executive, and judicial branches; and
- explaining which level of government they should contact to get information, express their opinions or get help on specific issues.

## Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing how the organization of the local, state, and national governments influences the formulation and implementation of policy (for example, weak versus strong mayoral system, unicameral versus bicameral legislature, legislative approval of presidential appointments);
- explaining why states have their own constitutions and the relationship of state constitutions to the federal constitution (for example, the "roots" of colonial assemblies);
- evaluating the tension between citizens' desire for government services and benefits, and the costs associated with providing those; and
- describing major provisions of the Colorado Constitution.

2.2 Students know how power, authority, and responsibility are distributed, shared, and limited through federalism as established by the United States Constitution.

## Grades K-4

In grades K-4, what students know and are able to do include...

- identifying limits of authority for the self, school, community, state.

## Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining how the Constitution divides the powers of government among the executive, legislative, and judicial branches, and how each branch can check the powers of another; and
- explaining how and why powers are distributed between local, state, and national governments (for example, shared power such as to tax, borrow money, regulate voting; functions primarily exercised by state governments, such as education, law enforcement, highways; and distribution of power reflects the value of local decision-making and local control).

## Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing how the design of the United States Constitution balances and checks to prevent the abuse of power (for example, Marbury v. Madison, Supreme Court packing under New Deal, Watergate); and
- developing, evaluating, and defending positions on historical and contemporary conflicts over the respective roles, balance of power, and responsibility between local, state, and federal government.

2.3 Students know and understand the place of law in Pennsylvania and United States constitutional systems.

Grades K-4

In grades K-4, what students know and are able to do include...

- identifying people and groups who apply and enforce rules and laws as government (for example, police, judges, legislatures, mayors, principals);
- explaining why we have classroom and school rules; and
- identifying what makes a good rule or law.

Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying types of law: juvenile, criminal, civil, and explaining how law protects individual rights and promotes the common good;
- evaluating strengths and weaknesses of a rule or law;
- describing alternative means of conflict management, including negotiation, mediation, arbitration, and litigation; and
- explaining the role and importance of the Bill of Rights in the Pennsylvania and United States constitutional systems (for example, Supreme Court cases such as *Tinker v. Des Moines*, *Miranda v. Arizona*, *Gideon v. Wainwright*, *TLO v. New Jersey*).

Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining the significance of historical and contemporary events to illustrate the central place of the rule of law (for example, United States Supreme Court cases such as *United States v. Nixon*, *Mapp v. Ohio*, *Gideon v. Wainwright*);
- analyzing, using historical and contemporary examples, the meaning and significance of the idea of equal protection of laws for all persons (for example, *Brown v. Board of Education*, *University of California v. Bakke*);
- explaining how the state and federal courts' power of judicial review reflects the United States constitutional government (for example, *Marbury v. Madison*); and
- developing, evaluating and defending positions on current issues regarding judicial protection of individual rights (for example, explaining the basic concept of due process protections, including presumption of innocence, speedy and public trials, right to counsel, trial by jury, right of appeal).

2.4 Students know how public policy is developed at the local, state, and national levels.

Grades K-4

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In grades K-4, what students know and are able to do include...

- identifying how people monitor and influence decisions of their government (for example, read, follow issues, have discussions, vote, and contact elected representatives).

Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- defining public policy and identifying examples at local, state and national levels;
- describing how the public agenda is shaped by political leaders, interest groups, media, state and federal courts, and individual citizens;
- explaining how political parties, campaigns, and elections influence policy formation;
- evaluating the role of the media and public opinion in formulating public policy; and
- explaining how changing demographics affect civic responsibility.

Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- evaluating the contemporary roles of voters, political parties, associations, and groups in local, state, and national politics (for example, political action committees, interest groups, think tanks, unions, professional organizations);
- analyzing a current public policy issue at local, state, or national levels and evaluating the alternative positions (for example, welfare reform);
- explaining why conflicts within traditional principles of representative government may make agreement on issues of public policy difficult (for example, affirmative action, gun control, environmental protection, capital punishment, growth, welfare reform); and
- developing, evaluating, and defending positions about the role of media and public opinion in United States politics (for example, ways that government and media influence public opinion and the behavior of public officials).

STANDARD 3: Students know the political relationship of the United States and its citizens to other nations and to world affairs.

3.1 Students know how and why governments and nongovernmental agencies around the world interact politically.

Grades K-4

In grades K-4, what students know and are able to do include...

- identifying examples of international issues.

Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- defining foreign policy and describing ways that nations interact with one another diplomatically (for example, trade, treaties, humanitarian aid, military force).

Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- identifying and analyzing the effectiveness of solutions used to resolve an international problem or concern by governmental and nongovernmental agencies (for example, United Nations attempts to resolve political conflicts, attempts to deal with world-wide refugee problems, terrorism, attempts to protect the world's environment).

3.2 Students understand how the United States government develops foreign policy.

Grades K-4

In grades K-4, what students know and are able to do include...

- identifying examples of how the United States interacts with other countries (for example, trade and culture).

Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining the powers the United States Constitution gives to the branches of government in foreign policy;
- identifying current foreign policy issues and evaluating the geopolitical strategies the United States is using to deal with them;
- describing ways in which citizens can influence the formation of foreign policy; and
- explaining the relationship between United States foreign policy and national interest.

Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- analyzing how and why domestic politics may impose constraints or obligations on the ways in which the United States acts in the world, giving current political examples (for example, understanding treaties and their relationship to the Constitution); and
- identifying and analyzing issues concerning the national interests of the United States.

3.3 Students understand the domestic and foreign policy influence the United States has on other nations and how the actions of other nations influence politics and society of the United States.

#### Grades K-4

In grades K-4, what students know and are able to do include...

- describing ways in which the United States and other countries politically influence each other (for example, making a treaty, trade).

#### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- giving examples of how foreign policy decisions made by the United States government regarding other countries have affected lives of United States citizens (for example, the Gulf War, tariffs, embargoes);
- describing the influence of United States political ideas on other nations and the influence of other nations' ideas on the United States;
- describing diplomatic strategies in which agencies of the United States government have sought to help resolve an international problem and/or pursue our national interest or concern (for example, American diplomats have sought to mediate disputes in Bosnia, Northern Ireland, and the Middle East, participation of United States government officials in international conferences on the environment or population, sending humanitarian aid to countries in conflict); and
- describing ways in which nongovernmental agencies and organizations have sought to help with an international problem or concern (for example, the Red Cross helping victims of war or natural disasters, organizations of doctors or scientists helping with diseases or disasters like Chernobyl).

#### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- evaluating the impact of significant international developments on the United States and other nations (for example, impact of land mines);
- describing the impact abroad of the principles of the Declaration of Independence and the United States Constitution;
- giving examples of how foreign policy decisions made by foreign countries affect the United States;
- giving examples of diplomatic strategies used by the United States government when interacting on significant international issues (for example, humanitarian and development aid, economic sanctions);
- evaluating current international issues in which the foreign policy of the United States has played a significant role (for example, world trade negotiations - GATT agreements); and

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- identifying opportunities for citizens of the United States to participate in the resolution of international problems and concerns (for example, citizens pressure to release the remains of POWs from Vietnam).

STANDARD 4: Students understand how citizens exercise the roles, rights and responsibilities of participation in civic life at all levels - local, state, and national.

4.1 Students know what citizenship is.

Grades K-4

In grades K-4, what students know and are able to do include...

- identifying the criteria for citizenship in the United States; and
- explaining how students are citizens in the classroom, school, community, and state (for example, civic virtue, common courtesy, and honest and fair dealings).

Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining the meaning of citizenship in the United States;
- describing how to become a citizen in the United States (for example, the process of naturalization); and
- identifying significant characteristics of an effective citizen (for example, civic virtue, common courtesy, respect for person and property, civic and personal responsibility, and honest and fair dealings).

Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- explaining the rights and obligations of United States citizens;
- comparing and analyzing the rights and responsibilities of citizens and non-citizens in the United States; and
- evaluating the usefulness of the following characteristics of an effective citizen to participate effectively in public life (for example, civic virtue, common courtesy, respect for person and property, civic and personal responsibility, and honest and fair dealings).

4.2 Students know how citizens can fulfill their responsibilities for preserving the constitutional republic.

Grades K-4

In grades K-4, what students know and are able to do include...

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- giving examples of civic responsibilities that are important to themselves, their families, community, and state; and
- identifying important characteristics of an effective citizen that help preserve and strengthen the United States constitutional republic (for example, being involved, informed).

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying civic responsibilities (for example, accepting responsibility for the consequences of one's actions as a citizen, considering the rights and interests of others, voting, obeying the law, paying taxes, performing voluntary public service, jury service, serving in the armed forces);
- identifying contemporary issues that involve civic responsibilities and analyzing various positions on those responsibilities (for example, accepting responsibility for the consequences of one's actions, considering the rights and interests of others, voting, obeying the law, paying taxes, performing voluntary public service, jury service, serving in the armed forces); and
- analyzing the implications of not fulfilling citizen responsibilities.

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- evaluating whether and when their obligations as citizens require that their personal desires and interests be balanced with the public good;
- evaluating what to do when individual beliefs or constitutional principles are in conflict; and
- identifying and evaluating how the characteristics of an effective citizen promote the preservation of the republic.

4.3 Students know how citizens can exercise their rights.

### Grades K-4

In grades K-4, what students know and are able to do include...

- identifying important individual economic, personal, and political rights (for example, freedom of religion, freedom of speech, right to own property).

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- distinguishing between personal and political rights (for example, freedom of religion, freedom of speech, right to own property);

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- identifying and analyzing responses to situations involving historic and contemporary threats to the meaning of political rights (for example, right to vote, petition, assembly) as distinguished from personal rights (for example, free speech to express personal taste, freedom of conscience, freedom of movement, privacy rights);
- identifying and evaluating situations involving conflict between rights and proposing solutions to the conflict within the scope and limits of those rights; and
- using historical and legal sources of personal and political rights to defend the exercise of rights of citizens in a given situation (for example, Declaration of Independence, Constitution, Bill of Rights, court decisions).

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- identifying the scope and limits of rights (for example, all rights have limits);
- explaining considerations and criteria commonly used in determining what limits should be placed on specific rights (for example, clear and present danger, national security, public safety);
- evaluating different positions on contemporary issues that involve rights of citizens (for example, restricted membership in organizations, sexual harassment, school prayer, refusal of medical care); and
- describing and evaluating historical or current examples of citizen movements to ensure rights of all citizens.

4.4 Students know how citizens can participate in civic life.

### Grades K-4

In grades K-4, what students know and are able to do include...

- identifying ways in which they could take an active part in improving their school and community; and
- identifying criteria useful in selecting leaders within school.

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- explaining the meaning of civic life, politics, and government;
- identifying and applying criteria useful in selecting political leaders at local, state, and national levels;
- explaining how participation in civic and political life can help to solve problems; and
- describing how to influence public policy in the politics and governments of their own classrooms and schools.

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- evaluating the effectiveness of various forms of political participation (for example, voting, attending political and governmental meetings, contacting public officials);
- describing various ways one can exercise leadership and participate in public affairs (for example, campaigning);
- demonstrating understanding of strategies for monitoring and influencing current public policy (for example, writing to a public official, writing letters to the editor, working with advocacy groups, working on a political campaign or using technology to monitor and influence legislation); and
- describing the role of civil disobedience.

### FOREIGN LANGUAGE

1. Students communicate in a foreign language while demonstrating literacy in all four essential skills: listening, speaking, reading, and writing.
2. Students acquire and use knowledge of other cultures while developing foreign language skills.

STANDARD 1: Students communicate in a foreign language while demonstrating literacy in all four essential skills: listening, speaking, reading, and writing.

1.1 Listening: Students listen to comprehend information spoken in a foreign language.

In order to meet this standard, a student will...

- recognize common expressions;
- obtain meaning from diverse listening sources;
- demonstrate comprehension through appropriate responses; and
- engage in a variety of listening situations.

BEGINNING LEVEL or Grades K-4 of a K-12 Foreign Language Program

At the beginning level, what students know and are able to do include...

- comprehending common memorized words, expressions, and cognates when hearing the foreign language spoken from a variety of sources; and
- demonstrating comprehension of everyday conversations including familiar situations and simple instruction.

INTERMEDIATE LEVEL or Grades 5-8 of a K-12 Foreign Language Program

As students at the intermediate level extend their knowledge, what they know and are able to do include...

- identifying the main idea from simple instructions or conversations, basic survival situations, and familiar topics, such as school, leisure time activities, and family life;

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- obtaining meaning from simple conversations at a normal rate of speech; and
- identifying the main idea and/or specific information from a listening situation, live or recorded, such as stories, dialogue, films, songs, poems, plays, and conversations.

### ADVANCED LEVEL or Grades 9-12 of a K-12 Foreign Language Program

As students at the advanced level extend their knowledge, what they know and are able to do include...

- deriving meaning through context, intonation, and situations from listening sources including conversations, lectures, authentic videos, films, and recordings; and
- obtaining and processing information by selecting, categorizing, and analyzing from these sources

For students extending their foreign language education, what they know and are able to do may include...

- processing information by organizing, synthesizing, and evaluating from all types of authentic listening sources;
- integrating listening skills by interacting and/or participating with members of the community in various professions who use the foreign language; and
- using listening skills to interact culturally with peers and/or others in the foreign language.

1.2 Speaking: Students speak in the foreign language for a variety of purposes and for diverse audiences.

In order to meet this standard, a student will...

- apply pronunciation rules and intonation patterns;
- use vocabulary, grammatical forms, and structures of the target language to convey meaning;
- apply knowledge of cultural practices to spoken language;
- express needs, tell stories, obtain and convey information, explain concepts and procedures, and persuade; and

### BEGINNING LEVEL or Grades K-4 of a K-12 Foreign Language Program

At the beginning level, what students know and are able to do include...

- using learned pronunciation and intonation patterns;
  - speaking in predictable, familiar situations using learned vocabulary and phrases;
  - expressing personal opinions and desires with learned phrases;
  - describing everyday topics using appropriate vocabulary and grammatical structures;
- and
- asking and answering simple questions

### INTERMEDIATE LEVEL or Grades 5-8 of a K-12 Foreign Language Program

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As students at the intermediate level extend their knowledge, what they know and are able to do include...

- applying pronunciation and intonation patterns;
- describing and narrating with learned vocabulary;
- expressing and justifying simple opinions;
- maintaining brief conversations on familiar topics; and
- asking and answering complex questions.

### ADVANCED LEVEL or Grades 9-12 of a K-12 Foreign Language Program

As students at the advanced level extend their knowledge, what they know and are able to do include...

- applying pronunciation and intonation patterns at a normal rate of speech;
- making predictions, analyzing, drawing conclusions, and expressing facts and opinions;
- defining points of view; and
- summarizing and paraphrasing.

For students extending their foreign language education, what they know and are able to do may include...

- communicating and talking about topics of current, public, and personal interest; and
- handling complicated tasks such as describing, narrating, and hypothesizing with increasing accuracy.

1.3 Reading: students read and derive meaning from a variety of materials written in a foreign language.

In order to meet this standard, students will...

- recognize words, phrases, idiomatic expressions, and grammatical structures;
- demonstrate comprehension of reading materials written for a variety of purposes;
- use and apply the information gained from reading; and
- respond to the cultural elements contained in reading materials of the language.

### BEGINNING LEVEL or Grades K-4 of a K-12 Foreign Language Program

At the beginning level, what students know and are able to do include...

- recognizing cognates and common expressions;
- inferring meaning of unfamiliar words from context;
- showing comprehension of reading materials; and
- identifying cultural elements found in reading materials

### INTERMEDIATE LEVEL or Grades 5-8 of a K-12 Foreign Language Program

As students at the intermediate level extend their knowledge, what they know and are able to do include...

- comprehending main ideas of reading selections based on familiar vocabulary;
- responding to the reading selection; and

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- analyzing cultural elements found in the reading materials

### ADVANCED LEVEL or Grades 9-12 of a K-12 Foreign Language Program

As students at the advanced level further extend their knowledge, what they know and are able to do include...

- analyzing and synthesizing reading materials;
- recognizing the author's point of view and purpose;
- expressing personal reactions to reading materials; and
- interpreting cultural elements found in reading materials

For students extending their foreign language education, what they know and are able to do may include...

- using literary terminology accurately including setting, character, conflict, plot, resolution, and theme; and
- responding to and discussing a variety of authentic texts

1.4 Writing: Students write in a foreign language for a variety of purposes and for diverse audiences.

In order to meet this standard, students will...

- write for purposes such as relating personal experiences, obtaining and conveying information, explaining ideas and opinions, and persuading;
- write for audiences such as peers, teachers, community members, and people from other countries;
- plan, draft, revise, proofread, and edit written communications;
- use correct grammar, sentence structure, vocabulary, spelling, punctuation, and capitalization to convey meaning; and
- use legible handwriting and/or word processing.

### BEGINNING LEVEL or Grades K-4 of a K-12 Foreign Language Program

At the beginning level, what students know and are able to do include...

- writing about everyday topics and expressing personal opinions and desires using learned vocabulary phrases and grammatical structures;
- obtaining and reporting information for a variety of audiences;
- proofreading and rewriting their own work;
- using appropriate grammar, spelling, capitalization, and punctuation; and
- using legible handwriting and/or work processing.

### INTERMEDIATE LEVEL or Grades 5-8 of a K-12 Foreign Language Program

As students at the intermediate level extend their knowledge, what they know and are able to do include...

- writing descriptions and narrations, and expressing and justifying opinions;
- obtaining and reporting factual information;

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- developing and organizing ideas, planning, drafting, revising, proofreading, and editing their own work and that of other students, and
- using expanded vocabulary and complex grammatical structures.

### ADVANCED LEVEL or Grades 9-12 of a K-12 Foreign Language Program

As students at the advanced level further extend their knowledge, what they know and are able to do include...

- analyzing and drawing conclusions;
- incorporating information from foreign language resource materials in their writing;
- selecting and expressing ideas and opinions on topics from various content areas; and
- using specialized vocabulary and more advanced grammatical structures.

For students extending their foreign language education, what they know and are able to do may include...

- writing business letters and/or advertisements;
- using writing skills to analyze, persuade and hypothesize with increasing accuracy; and
- writing creative poetry and short stories.

**STANDARD 2:** Students acquire and use knowledge of cultures while developing foreign language skills.

In order to meet this standard, students will...

- demonstrate knowledge of aspects of foreign cultures such as daily life, education, history, geography, government, economics, and the arts;
- apply knowledge of cultural practices when communicating in a foreign language; and
- use the foreign language to access cultural information available only in that language.

### BEGINNING LEVEL or Grades K-4 of a K-12 Foreign Language Program

At the beginning level, what students know and are able to do include...

- observing and identifying everyday cultural practices;
- using culturally appropriate gestures and oral expressions for common or familiar classroom interactions; and
- listening to or reading materials in the language from the cultures being studied.

### INTERMEDIATE LEVEL or Grades 5-8 of a K-12 Foreign Language Program

As students at the intermediate level extend their knowledge, what they know and are able to do include...

- discussing components of the social patterns of the cultures being studied;
- using culturally appropriate language and gestures to interact with peers and adults; and
- expressing themselves in writing in a culturally appropriate manner.

### ADVANCED LEVEL or Grades 9-12 of a K-12 Foreign Language Program

As students at the advanced level further extend their knowledge, what they know and are able to do include...

- analyzing aspects of the cultures being studied, such as social and political institutions and laws;
- functioning in a culturally appropriate manner, through speaking and writing, in complex social and/or work situations; and
- researching a topic of interest using sources from the cultures being studied.

## MUSIC

1. Students will read and notate music.
2. Students will create music.
3. Students will listen to, analyze, evaluate, and describe music.
4. Students will relate music to various historical and cultural traditions.

STANDARD 1: Students will read and notate music.

### Grades K-4

In grades K-4, what students know and are able to do includes

- identifying whole, half, dotted half, quarter, eighth notes, and equivalent rests;
- reading simple melodic\* and rhythmic notation;
- identifying symbols and traditional terms referring to dynamics and tempo; and
- notating simple melodies and rhythms.

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying and reading rhythmic patterns using whole, half, dotted half, quarter, eighth, sixteenth notes, and equivalent rests in the context of a meter signature\*;
- reading melodic and rhythmic patterns;
- notating rhythmic, melodic, and expressive\* musical ideas; and
- identifying appropriate key signatures.

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- identifying, defining, and reading standard notation symbols for pitch, rhythm, dynamics, style\*, and tempo;
- reading advanced rhythmic and melodic notation; and
- notating advanced rhythmic, melodic, and expressive musical ideas.

STANDARD 2: Students will create music.

Grades K-4

In grades K-4, what students know and are able to do include...

- creating simple rhythmic and melodic patterns; and
- creating short selections, using a variety of sound sources

Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- creating rhythmic, melodic, and/or harmonic patterns;
- creating short compositions; and

As students in grades 9-12 extend their knowledge, what they know and are able to do includes

- creating rhythmic, melodic, and harmonic patterns or phrases; and
- improvising/creating a melody (melodies) over a chord progression.

STANDARD 3: Students will listen to, analyze, evaluate, and describe music.

Grades K-4

In grades K-4, what students know and are able to do include...

- listening to and identifying simple forms;
- identifying contrasts of timbre in sound; and
- identifying elements and/or expressive qualities in music

Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying and describing simple forms;
- identifying contrasts in meter, rhythm, melody and timbre; and
- identifying and examining criteria for evaluating music performances and compositions

Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- describing and comparing forms;
- describing and evaluating music performance using musical terminology; and
- explaining characteristics that distinguish musical styles
- attending, listening to, and describing a musical concert

STANDARD 4: Students will relate music to various historical and cultural traditions.

#### Grades K-4

In grades K-4, what students know and are able to do include...

- identifying how elements of music are used in examples from various cultures (for example: rhythms found in the music of Africa and rap music from America show commonalities); and
- identifying the roles of musicians in history and various cultures (for example: Scott Joplin and Billie Holiday were representatives of the early jazz movement in America); and
- demonstrating audience behavior appropriate for the context and style of music performed (for example: It is not appropriate to talk during an orchestra concert in contrast to its permissibility during a rock concert).

#### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- describing how distinguishing elements of music are used in examples from various cultures (for example: The rhythms present in many examples of Latin American music are derived from dance rhythms. Dance is an integral part of that culture); and
- describing the roles of musicians throughout history and in various cultures (for example: the Medieval European Minstrel served as a storyteller and a news broadcaster, as well as a musician. The American folk singer serves much the same function).

#### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- identifying and explaining the features of a given musical work in its historical or cultural context (for example: many African songs are constructed in the call and response form because they originally functioned as work songs. It was not necessary to read musical notation to learn, sing or enjoy this type of music); and
- comparing and evaluating the roles of musicians throughout history and in various cultures (for example: Haydn was able and willing to work under the system of royal patronage whereas Mozart would struggle with it and Beethoven would completely rebel against it due to the social influences exerted by the American and French revolutions).

### VISUAL ARTS

1. Students recognize and use the visual arts as a form of communication.
2. Students know and apply elements of art, principles of design, and sensory and expressive features of visual arts.
3. Students know and apply visual arts materials, tools, techniques, and processes.

4. Students relate the visual arts to various historical and cultural traditions.
5. Students analyze and evaluate the characteristics, merits, and meaning of works of art.

STANDARD 1: Students recognize and use the visual arts as a form of communication.

Grade K-4

In grades K-4, what students know and are able to do include...

- identifying visual images, themes, and ideas for works of art;
- selecting and using visual images, themes, and ideas to communicate meaning; and
- comparing the use of visual images and ideas.

Grade 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying and discussing how and why visual images, themes, and ideas communicate;
- selecting, organizing, and employing visual images, themes, and ideas in works of art to express an intended meaning; and
- evaluating meaning and communication in works of art.

Grade 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- interpreting and distinguishing intended meanings of visual images, themes, and ideas in works of art;
- researching and synthesizing visual images, themes, and ideas to create works of art which reflect personal experiences and intended meanings; and
- evaluating and defending the use of visual images, themes, and ideas to communicate intended meanings.

STANDARD 2: Students know and apply elements of art, principles of design, and sensory and expressive features of visual arts.

Grades K-4

In grades K-4, what students know and are able to do include...

- identifying elements of art and principles of design in works of art; and
- applying elements of art and principles of design to create works of art.

Grade 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

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- describing and discussing characteristics of elements of art, principles of design, and styles of art;
- using elements of art, principles of design, and styles of art to communicate ideas and experiences; and
- analyzing and evaluating the use of elements of art, principles of design, and styles of art that express ideas and experiences.

### Grade 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- comparing and contrasting elements of art, principles of design, sensory and expressive features, and functions of art;
- creating multiple solutions to visual arts problems by applying elements of art, principles of design, and sensory and expressive features; and
- evaluating the use of elements of art, principles of design, and sensory and expressive features in developing and solving visual arts problems.

STANDARD 3: Students know and apply visual arts materials, tools, techniques, and processes.

### Grades K-4

In grades K-4, what students know and are able to do include...

- identifying and describing different materials, tools, techniques, and processes; and
- using materials, tools, techniques, and processes to make works of art.

### Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying and experimenting with materials, tools, techniques, and processes;
- selecting and using materials, tools, techniques, and processes that enhance communication of ideas through art; and
- evaluating the selection and use of materials, tools, techniques, and processes.

### Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- demonstrating skill with a variety of materials, tools, techniques, and processes resulting in the creation of works of art; and
- evaluating the relationship between ideas and materials, tools, techniques, and processes used.

STANDARD 4: Students relate the visual arts to various historical and cultural traditions.

Grades K-4

In grades K-4, what students know and are able to do include...

- identifying works of art as belonging to various cultures, times, and places; and
- creating art based on historical and cultural ideas of diverse people.

Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying and comparing the characteristics of works of art from various cultures, times, and places;
- creating art based on personal interpretation of various historical and cultural contexts;
- demonstrating how history and culture of various people influence the creation, meaning, and style of works of art.

Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- describing the functions, meanings, and significance of works of art within various cultures;
- creating works of art based on comparison and evaluation of various historical and cultural contexts; and
- evaluating, analyzing, and interpreting works of art as related to the history and culture of various people.

STANDARD 5: Students analyze and evaluate the characteristics, merits, and meaning of works of art.

Grades K-4

In grades K-4, what students know and are able to do include...

- observing and describing a variety of works of art, including their own;
- using specific criteria to analyze works of art; and
- using specific criteria to evaluate works of art.

Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do include...

- identifying and discussing reasons for creating works of art;
- using methods of critical analysis and aesthetic inquiry; and
- formulating responses to works of art from personal and critical points of view.

Grades 9-12

As students in grades 9-12 extend their knowledge, what they know and are able to do include...

- interpreting meaning in works of art;
- evaluating works of art using critical analysis and aesthetic inquiry; and
- demonstrating the ability to form and defend appropriate judgments.

HEALTH EDUCATION

A. HEALTH CONCEPTS

Students will understand health promotion and disease prevention concepts. Students will be able to...

ELEMENTARY GRADES Pre-K-2

1. Recognize that there are multiple components of health.
2. Describe the transmission and prevention of communicable diseases.
3. Demonstrate an understanding of basic health terms.

EXAMPLES

- Using any art medium, students will make visuals which show children participating in health activities (e.g., eating healthful foods, learning to do crafts, spending time with family, or playing with friends).
- Practice proper handwashing.

ELEMENTARY GRADES 3-4

1. Describe the relationship between healthy practices and personal health (e.g., eating well and exercise).
2. Identify indicators of physical, mental, emotional, and social health during childhood.
3. Describe the basic structures and functions of the human body systems.
4. Identify common health problems of children that should be detected and treated early.
5. Describe ways in which a healthful school and community environment influences personal health.
6. Explain the difference between positive and negative responses to stress.
7. Demonstrate essential understanding of basic health concepts.

EXAMPLES

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- Role-play situations that cause stress for students (special events, tests, friends moving) showing that for some it has a positive effect (motivation to study or practice) and for some, negative effects (physical symptoms).
- List three things that should be included on a medicine label and explain why each is important.

### MIDDLE GRADES 5-8

1. Explain the relationship between healthy behaviors and the prevention of injury, illness, and disease.
2. Describe the relationship among physical, mental, emotional, and social health.
3. Analyze the effects that risky behaviors have on personal health (e.g., tobacco, drugs, poor nutrition, sexual activity, sedentary life-style, and behaviors resulting in injury).
4. Evaluate how health is influenced by the interaction of body systems (e.g., physical fitness and the respiratory and circulatory systems).
5. Analyze how the environment relates to personal health.
6. Explain how appropriate health care can prevent premature death and disability.
7. Identify the characteristics and stages of human growth and development.
8. Demonstrate thorough understanding of key health concepts.

### EXAMPLES

- Write a short essay describing how a broken leg, riding a bike with a friend, or other activities would affect all four components of adolescent's health.
- Explain why tobacco, alcohol, and marijuana are called gateway drugs.
- Analyze the health effects of tobacco, alcohol, and other drugs.
- Discuss the relationship between the endocrine and reproductive systems.

### SECONDARY GRADES 9-12

1. Analyze the relationship between personal health practices and individual well-being.
2. Describe the interrelationship of physical, mental, emotional, and social health throughout the stages of life.
3. Evaluate the short- and long-term effects of risky behavior.
4. Analyze the impact of personal health behaviors on body systems.
5. Analyze how the environment relates to personal and community health.
6. Describe health issues common at different stages of life.
7. Analyze how public health policies and laws influence health promotion and disease prevention.
8. Analyze how the prevention and control of health problems are influenced by research and medical advances.
9. Describe how disease-causing microorganisms, family history, nutrition, and other factors relate to the cause or prevention of disease and other health problems.
10. Describe how stress management relates to disease prevention.
11. Demonstrate in-depth understanding of complex health concepts.

## EXAMPLES

- Analyze how particular health practices prevent the transmission of communicable diseases.
- Evaluate the short- and long-term effects of the use of tobacco, alcohol, and other drugs.
- Discuss how personal hygiene practices affect physical and social well-being.
- Analyze the possible negative and positive impacts of industrial development on the environment of a community and the health of local residents.

## B. HEALTH INFORMATION, SERVICES, AND PRODUCTS

Students will know how to acquire valid information about health issues, services, and products. Students will be able to:

### ELEMENTARY GRADES Pre-K-2

1. Identify which school and community health helpers are needed in given situations.

### EXAMPLE

- Link specific tasks to specific healthcare providers such as family doctor, dentist, or nurse.

### ELEMENTARY GRADES 3-4

1. Identify characteristics of valid health information and products, and services that promote health.
2. Demonstrate ways to locate school and community health helpers.
3. Identify community agencies that advocate healthy individuals, families, and communities.

### MIDDLE GRADES 5-8

1. Analyze the validity of health information, products, and services and describe situations requiring their use.
2. Identify resources from home, school, and community that provide valid health information and services.

### EXAMPLE

- Prepare a healthful menu using the Food Guide Pyramid.

### SECONDARY GRADES

1. Provide evidence to support the validity of health information, products, and services.

2. Evaluate factors that influence personal selection of health products and services (e.g., cost and accessibility).
3. Access school and community health services (e.g., school nurse, family physician, emergency care).
4. Analyze various health problems and identify those that require professional health care services (e.g., dental cavities, sports injuries).

EXAMPLE

- Compare and contrast ingredients, packaging, and cost of three common acne products.

C. HEALTH PROMOTION AND RISK REDUCTION

Students will understand how to reduce their health risks through the practice of healthy behaviors. Students will be able to:

ELEMENTARY GRADES Pre-K-2

1. Differentiate between safe and harmful substances found at home and school.
2. Demonstrate personal hygiene skills.
3. Choose healthful foods.
4. Demonstrate a variety of safety skills for different situations (e.g., pedestrian, bus, fire, auto, and bicycle safety).
5. Apply coping strategies when they feel too excited, anxious, angry, or out of control.

EXAMPLE

- Demonstrate slowly counting to ten when role-playing a situation where the student feels out of control.

ELEMENTARY GRADES 3-4

1. Compare behaviors that are safe to those that are risky or harmful (e.g., bicycle safety, handling weapons, use of medicines).
2. Develop injury prevention and safety strategies for personal health.
3. Demonstrate basic care of human body systems.
4. Demonstrate healthful and safe ways to deal with or avoid threatening and stressful situations.

EXAMPLES

- Describe safe behavior in and near water.
- Demonstrate basic first aid for a scrape or first degree burn.

MIDDLE GRADES 5-8

## Agora Cyber Charter School – Academic Curriculum

1. Explain the importance of assuming responsibility for personal health.
2. Analyze a personal health assessment to determine health strengths and risks.
3. Develop strategies to improve or maintain personal and family health.
4. Develop injury prevention and response strategies for personal safety, including first aid.
5. Demonstrate ways to avoid or change situations that threaten personal safety.
6. Distinguish between healthy and unhealthy stress management techniques.

### EXAMPLES

- Discuss physical, emotional, and sexual abuse.
- Demonstrate the proper technique used to administer the Heimlich maneuver.
- Conduct a self-examination of health practices using an inventory or self-appraisal.

### SECONDARY GRADES

1. Analyze the extent to which individuals are responsible for enhancing health and safety in the community and the workplace.
2. Demonstrate strategies to avoid, change, and report unsafe situations.
3. Design, implement, and evaluate a plan of stress management.

### EXAMPLES

- Using computer technology or other media, create a brochure that outlines healthy strategies for the workplace.
- Analyze the school's sexual harassment policy and recommend ways to inform school staff and students about the prevention and consequences of inappropriate behavior.

### D. INFLUENCES ON HEALTH

Students will understand how media techniques, cultural perspectives, technology, peers, and family influence behaviors that affect health. Students will be able to:

#### ELEMENTARY GRADES Pre-K-2

1. Describe the influences of media on health.
2. Explain how information from school and family influences health.

#### ELEMENTARY GRADES 3-4

1. Evaluate the influences of culture on health.
2. Explain how media influences health decisions.
3. Describe ways technology affects personal health.
4. Describe ways to be a responsible friend and family member.

#### MIDDLE GRADES 5-8

## Agora Cyber Charter School – Academic Curriculum

1. Investigate the influence of cultural beliefs on health behaviors and the use of health services.
2. Analyze how messages from media influence both health behaviors and the selection of health information, products, and services (e.g., eating disorders, teen magazines, acne products, dental care).
3. Analyze the effect of technology on personal and family health.
4. Describe how school, family, and peers influence the health of adolescents.

### EXAMPLE

- Discuss, from a historical perspective, the use of alternative medical practices in the Native American culture.

### SECONDARY GRADES

1. Analyze how different cultures affect health beliefs and practices (gender equity).
2. Evaluate the effect of media and other factors on personal, family, and community health.
3. Evaluate the impact of technology on personal, family, and community health.
4. Analyze how the family, peers, and community influence the health of individuals.

### EXAMPLE

- Use critical thinking skills to analyze marketing and advertising techniques and their influence on alcohol and tobacco use, eating habits, and sexual behaviors.

### E. COMMUNICATION SKILLS

Students will understand that skillful communication can contribute to better health for themselves, their families, and the community. Students will be able to:

#### ELEMENTARY GRADES Pre-K-2

1. Demonstrate healthy ways to express needs, wants, and feelings.
2. Distinguish between verbal and nonverbal communication.

#### ELEMENTARY GRADES 3-4

1. Use appropriate communication and listening skills to enhance health.
2. Differentiate between negative and positive ways to deal with conflict.
3. Demonstrate non-violent strategies to resolve conflicts.
4. Express opinions and give accurate information about health issues.

#### MIDDLE GRADES 5-8

## Agora Cyber Charter School – Academic Curriculum

1. Demonstrate effective verbal and non-verbal communication skills to enhance health and to build and maintain healthy relationships (e.g., positive peer pressure).
2. Demonstrate refusal and negotiation skills which can enhance health by enabling them to deal with negative peer pressure.
3. Demonstrate conflict resolution strategies.
4. Analyze various communication methods which can be used to give information, ideas, and opinions about health issues.

### EXAMPLES

- Select a newspaper story about a conflict involving violence and discuss the issues involved on all sides. Describe how conflict resolution and negotiation skills could be used to defuse the violence.
- Write a fictitious or real letter to someone who is trying to change a health behavior (e.g., stop smoking, start exercising), and give them encouragement by citing the benefits of the change (e.g., reduced risk of lung cancer and heart disease).

### SECONDARY GRADES

1. Demonstrate healthy ways to listen and communicate effectively with family, peers, and others.
2. Demonstrate strategies that can be used to prevent or solve conflicts without harm.
3. Analyze the possible causes of conflict in schools, families, and communities.
4. Evaluate the effectiveness of various communication methods for accurately delivering health information and ideas.
5. Utilize strategies to overcome barriers when communicating information, ideas, feelings, and opinions about health issues.
6. Demonstrate the ability to work cooperatively as an advocate for healthy individuals, families, schools, and communities.
7. Adapt health messages and communication techniques to the characteristics of a particular audience.

### EXAMPLE

- Translate health information (e.g., risks of using drugs, how to prevent transmission of colds and flu) from a secondary health text to language and format understandable to elementary students.

## F. DECISION-MAKING AND GOAL SETTING

Students will learn how to set personal goals and make decisions that lead to better health. Students will be able to:

### ELEMENTARY GRADES Pre-K-2

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1. Explain when assistance is needed in making health-related decisions and setting health goals.
2. Set a short-term personal health goal.

### ELEMENTARY GRADES 3-4

1. Demonstrate the ability to apply a decision-making process to health issues and problems.
2. Predict the results of positive health decisions.

### MIDDLE GRADES 5-8

1. Demonstrate individual and collaborative decision-making processes to resolve health problems.
2. Analyze how health-related decisions are influenced by individuals, families, and community values.
3. Explain how decisions regarding health behaviors have consequences for them and others.
4. Describe how personal health goals are influenced by changing information, abilities, priorities, and responsibilities.
5. Develop a plan to attain personal health goals by employing personal strengths and addressing needs and health risks.

### EXAMPLE

- Write a story for the school newspaper explaining how teenage smoking is positively and negatively influenced by friends, role models, and community norms.

### SECONDARY GRADES

1. Demonstrate various decision making strategies that can be used to address behaviors which lead to trouble.
2. Analyze health concerns that require collaborative decision making.
3. Predict the immediate and long-term impact of health decisions on the individual, family, and community.
4. Implement a plan and evaluate progress in attaining personal health goals.
5. Formulate an effective long-range personal health plan.

### EXAMPLE

- Discuss how a local school board could use a collaborative decision-making process to develop a tobacco-free- school policy.

### A. PHYSICAL FITNESS

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Students will acquire the knowledge needed to be physically fit and take part in healthful physical activity on a regular basis. Students will be able to:

### ELEMENTARY GRADES Pre-K-2

1. Identify the physical changes that accompany moderate to vigorous activity (e.g., sweating, increased heart rate, heavy breathing).
2. Engage in moderate to vigorous physical activity.
3. Identify activities associated with each component of health-related fitness (e.g., cardiovascular endurance, muscular endurance, muscular strength, body composition).
4. Move with an awareness of others.
5. State reasons for safe and controlled movements.

### EXAMPLES

- Student is aware that the heart beats rapidly during physical activity.
- Explain the relationship of running to cardiovascular endurance, stretching to flexibility, etc.

### ELEMENTARY GRADES 3-4

1. Identify the components of health-related fitness (cardiovascular endurance, muscular endurance, muscular strength, flexibility, body composition).
2. Demonstrate specific activities to improve each of the components of health-related fitness.
3. Identify the benefits of regular participation in physical activity.
4. Participate in physical activity for the purpose of improving health-related fitness.
5. Participate in health-related fitness assessments.
6. Analyze potential risks of physical activities.
7. Utilize safety principles during activities.

### EXAMPLE

- Complete a series of exercises (e.g., curl-ups, v-sit, shoulder stretch, pushups, jogging in place) and explain the benefit of each and why they are done together.

### MIDDLE GRADES 5-8

1. Define the components of skill-related fitness (agility, balance, coordination, power, reaction time, and speed) and health-related fitness and identify activities which contribute to the development of each component.
2. Participate in and distinguish among a variety of health-related fitness activities.
3. Assess health-related fitness levels and develop personal fitness goals.
4. Establish personal physical activity goals and participate regularly in health-enhancing activities to accomplish these goals.

5. Demonstrate understanding of and apply the following principles of training: specificity (use of a specific exercise to develop skill in a particular activity); progression (increasing the level of intensity); and overload (e.g., increasing the weights used in an exercise in order to build muscle more quickly, rather than increasing the speed of the exercise).
6. Assess physiological indicators of exercise during and after physical activity (e.g., pulse rate, sweating).
7. Demonstrate appropriate stretching and warm up exercises that enhance the learning and performance of activities.
8. Identify and apply rules and procedures designed for safe participation.

#### EXAMPLE

- Participate, at least three times a week, in a multi-week program of walking, jogging, and running in which the time spent increases each week (2-minutes per session in the first week, 5 minutes in the second, and 7 minutes in the third). Students will keep a log and will record, for each session, the time spent, distance covered, and perceived level of exertion.

#### SECONDARY GRADES

1. Design and implement a personal fitness program based on an accurately assessed fitness profile applying the principles of training.
2. Participate in a variety of health-enhancing physical activities.
3. Demonstrate an understanding of how patterns of participation change throughout life, and develop strategies to deal with those changes.
4. Demonstrate the knowledge, skills, and behaviors needed to maintain or modify levels of fitness.
5. Analyze and compare physical fitness activities for their health-enhancing potential and benefits.

#### EXAMPLE

- Develop a personal fitness portfolio which may contain:
  1. Reports on their own health-related fitness status over a period of one year.
  2. Personal fitness goals.
  3. Records of physical activity, eating, and other behaviors that affect physical fitness.
  4. An end-of-the-year assessment of physical fitness.

## B. MOTOR SKILLS

Students will develop motor skills and apply these to enhance their movement and physical performance. Students will be able to:

### ELEMENTARY GRADES Pre-K-2

1. Demonstrate progress in mastering locomotor skills (skills used to move from one place to another, e.g., walking, running, jumping, hopping) and non-locomotor skills (skills used to move in place e.g., turning, twisting).
2. Demonstrate improving form when using various sports accessories (e.g., throwing a ball, catching a bean bag, hitting a hockey puck).
3. Demonstrate simple combinations of motor patterns (e.g., dribbling while running).
4. Make smooth transitions between sequential motor skills (e.g., running into a jump).
5. Adapt and adjust movement skills to uncomplicated, changing, environmental conditions and expectations (e.g., tossing a ball to a moving partner).
6. Identify the critical elements of fundamental movement patterns (e.g., throwing; ready position, arm preparation, turn side to target, step in opposition, etc.).
7. Apply movement concepts (e.g., patterns of movement, direction, speed, etc.) to a variety of fundamental skills (e.g., running in different directions without bumping into others or falling).

### EXAMPLE

- Use a series of motor skills to create and perform a movement pattern (skip-walk-hop-run-jump).

### ELEMENTARY GRADES 3-4

1. Create movement patterns in combination and/or sequence using movement concepts.
2. Distinguish between locomotor and non-locomotor skills in physical activities.
3. Demonstrate mature form in all locomotor patterns, non-locomotor skills, and selected sports accessories.
4. Adapt a skill to the demands of the environment (e.g., dribble and pass a ball to a moving receiver).
5. Demonstrate beginning skills of two or more specific movement forms (e.g., a beginner level gymnastics routine or a simple folk dance).
6. Combine movement skills in applied settings (e.g., run, jump, and land for distance).
7. Apply critical elements to improve personal performance (e.g., transfer weight from feet to hands at an increased speed, thus changing a mule kick into a handstand).

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8. Recognize and apply concepts that have an impact on the quality of movement (e.g., appropriate practice improves performance).
9. Identify and demonstrate appropriate safety practices and rules for activities.

### EXAMPLES

- Perform a jump rope routine to a simple jingle.
- Balance, with control, on a variety of objects (e.g., balance board, large apparatus, skates).

### MIDDLE GRADES 5-8

1. Demonstrate the correct use of skills in simplified versions of a variety of physical activities (e.g., a 3-on-3 basketball game, a simple folk or square dance).
2. Identify the critical elements of more advanced movement skills (e.g., describe elements of a sprinter's stance in track).
3. Describe and apply principles of practice and conditioning that enhance performance (e.g., warm-up before and cool-down after an activity).
4. Recognize general characteristics of movement that can be applied to specific settings (e.g., the "ready" position is similar for volleyball and softball or baseball).
5. Use offensive and defensive strategies in simple games and in non-complex settings (e.g., strategies for a singles or doubles tennis match).
6. Differentiate among the characteristics of highly skilled performances in different movement forms (e.g., explain the difference between a long distance run and a sprint).
7. Explain and apply more advanced knowledge of sport/activities (e.g., positional play in a game of basketball).
8. Use feedback from others to improve a skill by focusing on critical elements of the skill.
9. Create a safe environment for skill practice.

### SECONDARY GRADES

1. Demonstrate competency (basic skills, strategies, and rules) in more complex versions of different types of movement forms (e.g., team sports, individual and dual sport, outdoor pursuits, dance).
2. Demonstrate proficiency in a few movement forms (e.g., passing the requirements of the Red Cross intermediate swimmer level).
3. Use biomechanical concepts and principles (concepts and principles related to the mechanics of the body) to develop skills for specific activities.
4. Apply biomechanical concepts and principles to analyze and improve their own performances and the performances of others (e.g., view a videotape of themselves performing a physical activity and analyze the performance).
5. Evaluate risk and safety factors that may affect physical activity preferences.
6. Design appropriate practice sessions to improve performance.

7. Analyze time, cost, and accessibility factors related to regular participation in physical activities.
  1. Demonstrate appropriate etiquette, ways of interacting, care of equipment, and safety in the setting of an activity.
  2. Apply a decision-making process to the safety of themselves and others in activity settings.

#### EXAMPLES

- Exclusionary behavior during physical activity can be very subtle. Students are asked to observe activity during a physical education class or on the playground and record instances of perceived exclusionary behavior. For example, the methods used to choose teams, differences in ability level, and gender or cultural/ethnic differences, can lead to exclusionary behaviors. In addition, students are asked to suggest strategies for maximizing inclusion.
- Choose two famous athletes, one who is generally admired for positive behavior and one who is known generally for negative behavior. Compare and contrast the image portrayed by each athlete and comment on the effect the images have on their own behavior or behavior of others their age.

#### SECONDARY GRADES

1. Describe personal and group conduct necessary to participate cooperatively and ethically in both competitive and noncompetitive physical activities.
2. Accommodate for the differences in skill and performance levels of participants by adapting activities to encourage individual success.
3. Initiate independent and responsible personal behavior in physical activity settings.
4. Identify potentially dangerous consequences and outcomes of participation in physical activity.
5. Identify opportunities to share and learn from others through physical activity.
6. Demonstrate appropriate etiquette, ways of interacting, care of equipment, and safety in the setting of an activity.
7. Apply a decision-making process to their safety and that of others in activity settings.
8. Participate in group activities at community recreation centers.

## Computer/Technology Skills - Kindergarten

### Focus Areas

- Parts of the computer and how to operate
- Keyboard familiarity
- Grouping and sequencing
- Respect for the work of others
- Responsible care of resources
- Exploring multimedia
- Observing online resources

Strands: 1= Societal/Ethical Issues; 2 = Database; 3 = Spreadsheet; 4= Keyboard Utilization/Word Processing/Desk Top Publishing; 5 = Multimedia/Presentation; 6 = Telecommunications/Internet

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

### Objectives:

- 1.01 Identify the computer as a machine that helps people work and play. 1
- 1.02 Identify, discuss, and use common hardware terms/concepts (e.g., CPU, monitor, keyboard, mouse). 1
- 1.03 Identify and discuss correct and responsible use and care of computers and resources (AUP/IUP). 1
- 1.04 Demonstrate respect for the work of others. 1
- 1.05 Identify and discuss common features and functions of computer software (e.g., file, open, save, retrieve, draw). 1
- 1.06 Identify graphing as a tool for organizing information. 3
- 1.07 Identify and discuss terms/concepts such as collect, organize, and classify. 3
- 1.08 Identify basic word processing terms (e.g., file, menu bar, cursor, open, save, print). 4
- 1.09 Identify and discuss characteristics of multimedia (e.g., text, sound, images, color). 5
- 1.10 Identify and discuss multimedia terms/concepts beginning, middle, and end by arranging pictures in linear/sequential. 5
- 1.11 Recognize and discuss responsible use of multimedia resources and why it is important. 5
- 1.12 Discuss ownership of created works. 5
- 1.13 Identify and discuss the Internet as a source of information at school and home. 6
- 1.14 Identify and discuss terms/concepts (online, digital information, Internet, links). 6

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

### Objectives:

- 2.01 Use manipulatives and graphing software to organize and display data. 3
- 2.02 Identify, discuss, and use word processing as a tool to enter letters, numbers and words. 4
- 2.03 Identify, locate and use special keys (e.g., arrow keys, space bar, Shift, Enter/Return, Backspace, Delete), letters, and numbers on the keyboard. 4
- 2.04 Use multimedia software to identify and practice letters, numbers, shapes, and colors. 5
- 2.05 Use teacher-selected Internet resources/information to explore, identify, and discuss responsible use. 6
- 2.06 Use teacher-selected Internet resources/information to discuss ownership of creative works of individuals/groups/companies. 6

### Computer/Technology Skills - Grade 1

#### Focus Areas

- Respecting computer work of others
- Using technology at home and school
- Gathering, organizing, and displaying data
- Using word processing
- Exploring multimedia
- Responsible care of resources
- Observing online resources

Strands: 1= Societal/Ethical Issues; 2 = Database; 3 = Spreadsheet; 4= Keyboard Utilization/Word Processing/Desk Top Publishing; 5 = Multimedia/Presentation; 6 = Telecommunications/Internet

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

#### Objectives:

- 1.01 Identify, discuss, and represent visually uses of technology (e.g., computers, cell phones, digital cameras) at school and home. 1
- 1.02 Identify and discuss physical components of a computing device (e.g., CPU, monitor, keyboard, disk drive, printer, mouse). 1
- 1.03 Recognize and discuss safe and responsible use and care of technology resources ((AUP/IUP). 1
- 1.04 Discuss ownership of computer-created work. 1
- 1.05 Identify graphing as a tool for organizing information. 3
- 1.06 Identify and discuss graphing software terms/concepts (e.g., graph, patterns, display). 3
- 1.07 Recognize the rights of ownership of computer-created work of others. 4
- 1.08 Recognize the characteristics of multimedia (e.g., text, audio, images, video). 5

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- 1.09 Identify and discuss multimedia terms/concepts (e.g., slide/card, link/button, text box, navigate, transition). 5
- 1.10 Recognize and discuss responsible use of multimedia resources. 5
- 1.11 Recognize, discuss, and cite various types of resources. 5
- 1.12 Identify and discuss terms/concepts (e.g., bookmarks/favorites, information). 6
- 1.13 Identify and discuss ownership of creative work online of individuals/groups/companies and the importance of citing sources. 6

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

Objectives:

- 2.01 Use common computing devices and resources. 1
- 2.02 Observe, discuss, and use software to enter, calculate, display data, and interpret results. 3
- 2.03 Identify, discuss, and use word processing as a tool to enter numbers, words, and phrases. 4
- 2.04 Identify and use basic word processing terms (e.g., file, open, close, menu bar, save, print). 4
- 2.05 Locate and use letters, numbers, and special keys (e.g., arrow keys, space bar, insert Enter/Return, Backspace, Delete) on the keyboard. 4
- 2.06 Identify, discuss, and use menu/tool bar functions in word processing applications. 4
- 2.07 Use multimedia software to illustrate words/phrases/concepts. 5
- 2.08 Explore Internet resources and information using teacher-created bookmarks/favorites and discuss the variety and types of information found. 6
- 2.09 Use teacher-selected Internet resources/information to identify, discuss, and chart elements that make an online resource useful, appropriate, and safe. 6

Computer/Technology Skills - Grade 2

Focus Areas

- Using technology in the community
- Respecting the computer work of others
- Observing online resource
- Using electronic database to locate information
- Responsible care of resources
- Building word processing skills
- Collecting, sorting, and displaying data
- Exploring multimedia tools
- Using drawing tools

Strands: 1= Societal/Ethical Issues; 2 = Database; 3 = Spreadsheet; 4= Keyboard Utilization/Word Processing/Desk Top Publishing; 5 = Multimedia/Presentation; 6 = Telecommunications/Internet

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

Objectives:

- 1.01 Identify, discuss and visually represent uses of digital technology in the community (e.g., bar code scanners, handhelds, mobile phones, optical storage devices, GPS's). 1
- 1.02 Demonstrate correct use of common technology terms (e.g., hardware, software, CD, hard drive). 1
- 1.03 Identify and discuss appropriate and safe behaviors online. 1
- 1.04 Recognize individual's rights of ownership of created works. 1
- 1.05 Identify and discuss print and electronic databases (e.g., phone book, automated circulation system, CD-ROM encyclopedias) as a way to collect, organize, and display data. 2
- 1.06 Identify and discuss terms/concepts sort, search/filter, keyword using electronic databases (e.g., automated circulation system, electronic encyclopedias). 2
- 1.07 Identify spreadsheets as a tool to organize, calculate, and graph data to make predictions. 3
- 1.08 Identify and discuss spreadsheet terms/concepts (e.g., sort, classify, line graphs). 3
- 1.09 Recognize an individual's rights of ownership to computer-generated work. 4
- 1.10 Identify and use multimedia terms/concepts (e.g., storyboard, linear/sequential, audio/video clips, images). 5
- 1.11 Identify and discuss issues (e.g., personal information, images, appropriateness and accuracy of information) to consider in selection and use of materials for multimedia projects. 5
- 1.12 Identify terms/concepts (e.g., online, browser, navigation, resources, web address, webpage, weblinks). 6
- 1.13 Identify responsible and safe online behavior and discuss why it is important. 6
- 1.14 Identify online resources as the work of individuals/groups/companies and discuss why citing resources is necessary. 6
- 1.15 Identify and discuss telecommunications/Internet as a tool for communication and collaborations. 6

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

Objectives:

- 2.01 Recognize, discuss and use the features/functions of computing devices (e.g., creating, retrieving, saving, printing data). 1
- 2.02 Use prepared electronic database (e.g., automated circulation, CD-ROM encyclopedias, NC Wise OWL) to conduct keyword search/filters to meet information needs. 2
- 2.03 Enter/edit data in a prepared spreadsheet and observe the changes that occur to make predictions. 3

- 2.04 Use spreadsheet software in content areas to enter, display, and identify sources of data. 3
- 2.05 Recognize, discuss, and use word processing as a tool to enter/edit, print, and save assignments. 4
- 2.06 Use and discuss basic word processing terms/concepts (e.g., desktop, menu/tool bar, document, text). 4
- 2.07 Identify and use correct finger placement for home row keys. 4
- 2.08 Identify and use menu/tool bar features/functions in word processing documents. 4
- 2.09 Identify and use multimedia tools to combine text and graphics assignment. 5
- 2.10 Identify, discuss, and cite resources for a multimedia project.
- 2.11 Modify/edit an existing linear/sequential multimedia story to include student narration activity. 5
- 2.12 Use teacher-selected Internet resources to locate, discuss, and compare information about your local community. 6

#### PERFORMANCE INDICATORS FOR TECHNOLOGY—LITERATE STUDENTS

Pre-K-2: All students should have opportunities to demonstrate the following performances.

Prior to completion of Grade 2, students will:

- 1. Use input devices (e.g., mouse, keyboard, remote control) and output devices (e.g., monitor, printer) to successfully operate computers, VCRs, audiotapes, and other technologies. (1)
  - 2. Use a variety of media and technology resources for directed and independent learning activities. (1, 3)
  - 3. Communicate about technology using developmentally appropriate and accurate terminology. (1)
  - 4. Use developmentally appropriate multimedia resources (e.g., interactive books, educational software, elementary multimedia encyclopedias) to support learning. (1)
  - 5. Work cooperatively and collaboratively with peers, family members, and others when using technology. (2)
  - 6. Demonstrate positive social and ethical behaviors when using technology. (2)
  - 7. Practice responsible use of technology systems and software. (2)
  - 8. Create developmentally appropriate multimedia products with support from teachers, family members, or student partners. (3)
  - 9. Use technology resources (e.g., puzzles, logical thinking programs, writing tools, digital cameras, drawing tools) for problem solving, communication, and illustration of thoughts, ideas, and stories. (3, 4, 5, 6)
  - 10. Gather information and communicate with others using telecommunications, with support from teachers, family members, or student partners. (4) 6
- ( ) indicates NETS\*S Goal(s))

Computer/Technology Skills - Grade 3

Focus Areas

- Awareness of Copyright Law
- Responsible and safe use of resources
- Exploring information technologies
- Building word processing techniques
- Using multimedia tools
- Exploring spreadsheets

Strands: 1= Societal/Ethical Issues; 2 = Database; 3 = Spreadsheet; 4= Keyboard Utilization/Word Processing/Desk Top Publishing; 5 = Multimedia/Presentation; 6 = Telecommunications/Internet

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

Objectives:

- 1.01 Identify, discuss, and chart uses of technology in the community (e.g., farmers, grocery, restaurant, veterinarian, medical and emergency services). 1
- 1.02 Identify the function of common computing devices (e.g., input, output, processing). 1
- 1.03 Recognize, discuss, and use responsible and safe behavior in the use of technology resources. 1
- 1.04 Demonstrate knowledge of individual's rights of ownership of created works by citing sources. 1
- 1.05 Identify, discuss, and visually represent uses of databases in the community (e.g., school, grocery, pharmacy, business) to collect, organize, and display information. 2
- 1.06 Identify, discuss, and use database terms (e.g., data entry, field, record, list, sort, search/filter, keyword). 2
- 1.07 Recognize spreadsheets as a tool to organize, calculate, and graph information to make predictions. 3
- 1.08 Identify and discuss spreadsheet terms/concepts (e.g., cell, column, row, values, labels, chart, graph). 3
- 1.09 Identify and use formatting terms/concepts (e.g., font size/style, line spacing, margins, italic). 4
- 1.10 Recognize that Copyright Laws protect creative works of individuals/groups/companies. 4
- 1.11 Identify and discuss guidelines for media (e.g., personal information, images, content, language) to consider in developing multimedia projects. 5
- 1.12 Identify and discuss Copyright and Fair Use Guidelines. 5
- 1.13 Identify and discuss use of rubrics to define and evaluate elements (e.g., content, purpose, usefulness) of multimedia projects. 5
- 1.14 Identify, discuss, and use terms/concepts (e.g., web browser, URL, keyword, search engine, weblinks). 6
- 1.15 Recognize, discuss, and demonstrate responsible and safe online behavior. 6

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- 1.16 Cite sources of information (print and nonprint) for a project. 6
- 1.17 Identify and discuss collaborative tools (e.g., email, messaging, videoconferencing).  
6

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

Objectives:

- 2.01 Select and use appropriate features and functions of hardware and software for assignments. 1
- 2.02 Discuss and select appropriate technology tools (e.g., probeware, digital cameras, handhelds) to collect, analyze, and display data. 1
- 2.03 Use prepared databases to search/filter and sort alphabetically/numerically in ascending/descending order. 2
- 2.04 Modify prepared databases to enter/edit additional information and cite the source. 2
- 2.05 Plan, discuss, and use keyword search/filter using one criterion in prepared databases. 2
- 2.03 Enter/edit data in a prepared spreadsheet to perform calculations. Identify and discuss the changes that occur. 3
- 2.04 Demonstrate correct finger placement for home row keys. 4
- 2.05 Use menu/tool bar functions (e.g., font size/style, line spacing) to format and change the appearance of word processing documents. 4e
- 2.06 Identify, discuss, and use multimedia tools (e.g., capture, create, edit, publish). 5
- 2.07 Modify/edit an existing multimedia project to include branching and identify added sources. 5
- 2.08 Investigate teacher-selected Internet resources about communities; discuss and compare findings for usefulness. 6

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

Objectives:

- 3.01 Recognize, discuss, and use graphs to display and interpret data in prepared spreadsheets; identify and cite sources. 3
- 3.02 Enter/edit data in a prepared spreadsheet to perform calculations and determine which graph best represents the data. 3
- 3.03 Use word processing as a tool to write, edit, and publish sentences, paragraphs, and stories. 4
- 3.04 Identify, discuss, and use multimedia to present ideas/concepts/information in a variety of ways. 5

Computer/Technology Skills - Grade 4

Focus Areas

## Agora Cyber Charter School – Academic Curriculum

- Using databases
- Using spreadsheets
- Responsible and safe use of online resources
- Locating information on the Internet
- Evaluating information found through telecommunications
- Developing word processing documents
- Exploring e-mail
- Identifying ways technology has changed Pennsylvania

Strands: 1= Societal/Ethical Issues; 2 = Database; 3 = Spreadsheet; 4= Keyboard Utilization/Word Processing/Desk Top Publishing; 5 = Multimedia/Presentation; 6 = Telecommunications/Internet

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

Objectives:

- 1.01 Identify, discuss, and visually represent ways technology has changed the lives of people in Pennsylvania. 1
- 1.02 Recognize, discuss, and use network terms/concepts (e.g., stand alone, network, file server, LANs, network resources). 1
- 1.03 Recognize, discuss, and use responsible, ethical, and safe behaviors when using technology resources (AUP/IUP). 1
- 1.04 Recognize that Copyright Laws protect creative work of individuals/groups/companies by citing sources. 1
- 1.05 Identify and discuss the benefits of non-networked and networked computers. 1
- 1.06 Explore and discuss occupations/careers that use computers/technology tools in Pennsylvania. 1
- 1.07 Identify, discuss, and visually represent how and why databases are used in Pennsylvania (e.g., schools, government, business, and science) to collect and organize information. 2
- 1.08 Identify and discuss how spreadsheets are used to calculate and graph data in a variety of settings (e.g., schools, government, business, industry). 3
- 1.09 Recognize and discuss the importance of citing sources of copyrighted materials in documents. 4
- 1.10 Use published documents (e.g., letter, memo, newspaper) to identify and discuss document design and layout. 4
- 1.11 Identify and discuss the use of multimedia tools to report content area information. 5
- 1.12 Recognize, discuss, and use multimedia terms/concepts (e.g., navigation buttons, transitions, links/hyperlinks, animation). 5
- 1.13 Recognize, discuss, and use Copyright and Fair Use Guidelines in multimedia projects by explaining selection and use of resources. 5
- 1.14 Recognize and discuss telecommunications terms/concepts (e.g., browser, keyword, URL, hypertext, www). 6

- 1.15 Recognize, discuss, and model responsible and safe behavior using online resources.  
6

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

Objectives:

- 2.01 Sort and search/filter a prepared content area database for information and use correct terms/concepts to explain strategies. 2
- 2.02 Plan and use two criteria to search/filter prepared databases to locate and organize information for content assignments. 2
- 2.03 Identify, discuss, and use the spreadsheet terms/concepts (e.g., cell, column, row, values, labels, graph, formula). 3
- 2.04 Enter/edit data in prepared spreadsheets to perform calculations using simple formulas (+, -, \*, /) and observe the changes that occur. 3
- 2.05 Use spreadsheets and graphs to organize, calculate, and display data in content areas. 3
- 2.06 Identify, discuss, and use terms/concepts of menu/tool bar (e.g., print preview, WYSIWIG, page setup, Spell Check, thesaurus) in word processing documents. 4
- 2.07 Recognize, discuss, and use proper keyboarding techniques. 4
- 2.08 Use menu/tool bar features (e.g., print preview, Spell Check, thesaurus) to edit and make corrections to documents. 4
- 2.09 Recognize and discuss guidelines for media (e.g., personal information, images, content, language) to consider in developing multimedia projects. 5
- 2.10 Storyboard and modify multimedia projects with menus, branching and/or multiple outcomes for content areas, citing sources as a group activity. 5
- 2.11 Recognize, discuss, and use rubrics to evaluate elements (e.g., content, organization, appropriateness of materials, citations) of multimedia projects/products. 5
- 2.12 Plan, discuss, and use search strategies with two or more criteria to find information online about Pennsylvania. 6
- 2.13 Identify, discuss, and use online collaborative tools (e.g., email, surveys, videoconferencing) to collect data for content area assignments/projects. 6

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

Objectives:

- 3.01 Select and use technology tools (e.g., probeware, digital camera, scanners) to collect, analyze, and display information for content assignments. 1
- 3.02. Use databases to analyze and evaluate information in content areas and cite sources.  
2
- 3.03 Discuss, plan, and develop simple databases in content area to enter/edit, collect, organize, and display content data. 2

## Agora Cyber Charter School – Academic Curriculum

- 3.04 Enter data into prepared spreadsheets and select graph to best represent data and cite sources of data. 3
- 3.05 Use spreadsheet data and graphs to make predictions, solve problems, and make decisions in content areas. 3
- 3.06 Use word processing as a tool for writing, editing, and publishing paragraphs, stories, and assignments. 4
- 3.07 Locate, select, organize, and present content area information from the Internet for a specific purpose and audience, citing sources. 6
- 3.08 Use a rubric as a guide to select, evaluate digital resources and information for content and usefulness in content area assignments. 6

### Computer/Technology Skills - Grade 5

#### Focus Areas

- Using search strategies
- Responsible and safe use of online resources
- Awareness of Copyright and Fair Use Guidelines
- Exploring the need for protection against viruses and vandalism
- Participating in curriculum-based telecommunication projects
- Developing word processing document using proper keyboarding techniques
- Developing multimedia presentation citing sources
- Developing a product using a database
- Evaluating resources and information for accuracy and usefulness
- Selecting and using a variety of technology tools

Strands: 1= Societal/Ethical Issues; 2 = Database; 3 = Spreadsheet; 4= Keyboard Utilization/Word Processing/Desk Top Publishing; 5 = Multimedia/Presentation; 6 = Telecommunications/Internet

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

#### Objectives:

- 1.01 Recognize, discuss, and visually represent changes in information technologies and the impact changes have in schools, workplace, and society in the United States. 1
- 1.02 Recognize, discuss, and use terms/concepts related to the protection of computers, networks and information (e.g., virus protection, network security, passwords, firewalls, privacy laws). 1
- 1.03 Recognize, discuss and use appropriate behavior related to computers, networks, digital information (e.g., security, privacy, passwords, personal information), and identify possible consequences of unethical behavior. 1
- 1.04 Recognize and discuss how Copyright Laws protect ownership of intellectual property and discuss consequences of misuse. 1

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- 1.05 Recognize and discuss methods used to protect computers, networks, and information from viruses, vandalism and intrusion. 1
- 1.06 Identify and discuss appropriate technology tools (virus software) to protect computers, networks, and information from vandalism and intrusion. 1
- 1.07 Explore and discuss occupations/careers that use computers/technology. 1
- 1.08 Recognize and discuss how and why databases are used in society. 2
- 1.09 Recognize, discuss, and explore how spreadsheets are used to calculate, graph, and represent data in a variety of settings (e.g., schools, government, business, industry, mathematics, science). 3
- 1.10 Recognize and explain the advantages and disadvantages of using word processing to create content area projects/products. 4
- 1.11 Demonstrate appropriate use of copyrighted materials in word processing documents used for content projects/assignments. 4
- 1.12 Recognize and explain the advantages and disadvantages of using multimedia to develop content area projects/products. 5
- 1.13 Identify and discuss multimedia terms/concepts (e.g., menu, branching, navigation, multimedia, design). 5
- 1.14 Demonstrate knowledge of Copyright and Fair Use Guidelines by explaining selection and use of resources in content projects/assignments. 5
- 1.15 Recognize, discuss, and use online terms/concepts (e.g., search strategies, citing resources, filters, AUP/IUP). 6

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

Objectives:

- 2.01 Use knowledge of database terms/concepts and functions to find information in prepared content area databases and describe strategies used. 2
- 2.02 Cite sources of information from content area databases used in assignments. 2
- 2.03 Create/modify simple content area databases to enter/edit, collect, organize, and display content data for an assignment/project, citing resources. 2
- 2.04 Use spreadsheet terms/concepts and functions (e.g., median, range, mode) to calculate, represent, and explain content area assignments. 3
- 2.05 Modify/create and use spreadsheets to solve problems by performing calculations using simple formulas and functions (e.g., +, -, \*, /, average). 3
- 2.06 Create/modify simple content area spreadsheets to enter/edit, calculate, organize, and display content data for an assignment/project, citing resources. 3
- 2.07 Identify, discuss and use WP/DTP menu/tool bar terms/concepts (e.g., import, portrait, landscape, copy and paste between two documents) to describe assignments/projects. 4
- 2.08 Use proper keyboarding techniques to improve accuracy, speed, and general efficiency in computer operation. 4
- 2.09 Demonstrate knowledge of WP/DTP tools to develop documents, which include data imported from a spreadsheet/database. 4

- 2.10 Select and use WP/DTP menu/tool bar features to edit/revise and change existing documents/projects/assignments. 4
- 2.11 Use menus and branching to modify/create non-linear projects/products in content areas. 5
- 2.12 Use student-generated rubrics to evaluate multimedia presentations for elements (e.g., organization, content, design, presentation, citation). 5
- 2.13 Plan, discuss, and use search strategies with two or more criteria to find information for assignments/projects/products about the Western Hemisphere. 6
- 2.14 Model and explain the importance of ethical, responsible, and safe behavior when using networked digital information (e.g., Internet, mobile phone, wireless, LANs). 6
- 2.15 Select, discuss and evaluate digital resources and information for content, accuracy, usefulness and cite sources. 6
- 2.16 Recognize, discuss, and/or use email/videoconferencing/webconferencing as a means of interactive communications. 6

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

Objectives:

- 3.01 Select and use search strategies with two or more criteria in prepared databases to locate, organize, and present information for content area assignments. 2
- 3.02 Use content area databases to analyze, evaluate, organize, and compare information for assignments. 2
- 3.04 Cite sources of copyrighted data used in spreadsheets to analyze, interpret, and display findings in content areas. 3
- 3.05 Enter/edit data into a spreadsheet to test simple “what if…” statements to solve problems and make decisions in content area. 3
- 3.06 Recognize, discuss, and establish ethical guidelines for use of personal and copyrighted media (e.g., images, music, video, content, language) in multimedia projects and presentations. 5
- 3.07 Use evaluation tools to select Internet resources and information for content and usefulness in content area assignments. 6

GRADES 3-5: All students should have opportunities to demonstrate the following performances.

Prior to completion of Grade 5, students will:

- 1. Use keyboards and other common input and output devices (including adaptive devices when necessary) efficiently and effectively. (1)
- 2. Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide. (1, 2)
- 3. Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use. (2)

## Agora Cyber Charter School – Academic Curriculum

4. Use general purpose productivity tools and peripherals to support personal productivity, remediate skill deficits, and facilitate learning throughout the curriculum. (3)
  5. Use technology tools (e.g., multimedia authoring, presentation, Web tools, digital cameras, scanners) for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences. (3, 4)
  6. Use telecommunications efficiently to access remote information, communicate with others in support of direct and independent learning, and pursue personal interests. (4)
  7. Use telecommunications and online resources (e.g., e-mail, online discussions, Web environments) to participate in collaborative problem-solving activities for the purpose of developing solutions or products for audiences. (4, 5)
  8. Use technology resources (e.g., calculators, data collection probes, videos, educational software) for problem solving, self-directed learning, and extended learning activities. (5, 6)
  9. Determine which technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems. (5, 6)
  10. Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources. (6)<sup>7</sup>
- () indicates NETS\*S Goal(s))

### Computer/Technology Skills - Grade 6

#### Focus Areas

- Responsible and safe use of online resources
- Using Copyright and Fair Use guidelines
- Refining application skills
- Using formulas in a spreadsheet
- Using search strategy two or more criteria in a database
- Increasing productivity and accuracy in keyboarding
- Using word processing, spreadsheet, database, and multimedia for assignments in all subject areas
- Locating and retrieving information using telecommunications
- Evaluating resources and information for accuracy and usefulness
- Selecting and using a variety of technology tools

Strands: 1= Societal/Ethical Issues; 2 = Database; 3 = Spreadsheet; 4= Keyboard Utilization/Word Processing/Desk Top Publishing; 5 = Multimedia/Presentation; 6 = Telecommunications/Internet

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

Objectives:

## Agora Cyber Charter School – Academic Curriculum

- 1.01 Recognize, discuss, and visually represent knowledge of changes in information technologies and the impact changes have on schools, workplaces and society. 1
- 1.02 Recognize and discuss how Copyright Laws protect ownership of intellectual property and discuss consequences of misuse. 1
- 1.03 Identify and discuss minor hardware and software issues/problems. 1
- 1.04 Identify and discuss technology skills needed in the workplace and how they impact school students today. 1
- 1.05 Recognize and discuss how and why databases are used to collect, organize, and analyze information in a variety of settings. 2
- 1.06 Identify and use database terms/concepts (e.g., reports, layout, format) to describe and explain findings. 2
- 1.07 Cite sources of information used in content area databases. 2
- 1.08 Recognize and discuss use of spreadsheets to calculate, graph, and present data in a variety of settings (e.g., schools, government, business, industry, mathematics, science). 3
- 1.09 Identify, discuss and use WP/DTP terms/concepts (e.g., minimize document, resize document, toggle between two open documents on the desktop). 4
- 1.10 Demonstrate appropriate use of copyrighted materials in word processing documents used for content projects/assignments. 4
- 1.11 Recognize, discuss, and establish ethical guidelines for use of personal and copyrighted media (e.g., images, music, video, content, language) in multimedia projects and presentations. 5
- 1.12 Recognize, discuss, and model correctly formatted citations for copyrighted materials and adhere to Fair Use Guidelines. 5
- 1.13 Identify and discuss terms/concepts associated with safe, effective, and efficient use of the telecommunications/Internet (e.g., password, firewalls, Spam, security, Fair Use, AUP/IUP's). 6
- 1.14 Demonstrate knowledge of responsible, safe, and ethical use of networked digital information (e.g., Internet, mobile phone, wireless, LANs). 1
- 1.15 Demonstrate knowledge of Copyright and Fair Use Guidelines by explaining selection and use of Internet resources in content projects/assignments. 6

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

Objectives:

- 2.01 Recognize, discuss, and use multi-tasking concepts (e.g., windows, toggle between two windows on the desktop, copy and paste data between two windows on the desktop). 1
- 2.02 Investigate, discuss, and explain why computers, networks, and information must be protected from viruses, vandalism and intrusion, both malicious and mischievous (AUP/IUP). 1
- 2.03 Use spreadsheet terms/concepts and functions to calculate, represent, and explain content area findings. 3
- 2.04 Use proper keyboarding techniques to improve accuracy, speed and general efficiency in computer operation. 4

- 2.05 Use WP/DTP menu/tool bar features to publish for a specific audience and purpose. 4
- 2.06 Demonstrate knowledge of the advantages/disadvantages of using multimedia to develop, publish, and present information to a variety of audiences. 5
- 2.07 Identify, discuss, and use multimedia terms/concepts (e.g., multimedia authoring, web tools) to develop content projects. 5
- 2.08 Use menu/tool bar features to edit/modify/revise multimedia projects to present content information for a different audience and purpose. 5
- 2.09 Select and justify the use of appropriate online collaborative tools (e.g., surveys, email, discussion forums, webpages) to develop content area presentations for the intended audience and purpose. 6

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

Objectives:

- 3.01 Select and use responsibly a variety of computing devices (e.g., probeware, handhelds, digital cameras, scanners) to collect, analyze and present content area information. 1
- 3.02 Plan and develop database reports to organize, explain, and display findings in content areas. 2
- 3.03 Develop and use search strategies with two or more criteria to solve problems and make decisions in content areas. 2
- 3.04 Use database sort and search/filter strategies to organize, analyze, interpret, and evaluate findings in content areas and cite sources. 2
- 3.05 Enter/edit data and use spreadsheet features and functions to project outcomes and test simple “what if…” statements in content assignments. 3
- 3.06 Select and use chart/graph functions to analyze and display findings in content projects, citing data sources. 3
- 3.07 Modify/create spreadsheets to calculate and graph data to incorporate into content area projects (e.g., word processing, multimedia, webpages). 3
- 3.08 Modify/create and use spreadsheets to solve problems, make decisions, support, and display findings in content areas projects. 3
- 3.09 Demonstrate knowledge of the advantages/disadvantages of using word processing to develop, publish, and present information to a variety of audiences. 4
- 3.10 Select and use WP/DTP features/functions to design, format, and publish assignments/products. 4
- 3.11 Use rubrics to evaluate multimedia presentations for elements (e.g., content, organization, accuracy, design, purpose). 5
- 3.12 Plan, collect, evaluate, interpret, and use information from a variety of resources to develop assignments about the Eastern Hemisphere, Europe, and Former Soviet Republics. 6
- 3.13 Use evaluation tools to select Internet resources and information for content and usefulness in content area assignments. 6

## Computer/Technology Skills - Grade 7

### Focus Areas

- Responsible and safe use of online resources
- Using Copyright and Fair Use Guidelines
- Refining application skills
- Using formulas in a spreadsheet
- Using search strategy with two or more criteria in a database
- Increasing productivity and accuracy in keyboarding
- Using word processing, spreadsheet, database, and multimedia for assignments in all subject areas
- Locating and retrieving information using telecommunications
- Evaluating resources and information for accuracy and usefulness
- Selecting and using a variety of technology tools

Strands: 1= Societal/Ethical Issues; 2 = Database; 3 = Spreadsheet; 4= Keyboard Utilization/Word Processing/Desk Top Publishing; 5 = Multimedia/Presentation; 6 = Telecommunications/Internet

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

### Objectives:

- 1.01 Identify and describe the effect technological changes have had on business, transportation, communications, industry, and agriculture in a global society. 1
- 1.02 Use network terms and concepts related to local and wide area networks (LANs, WANs) and Internet connectivity. 1
- 1.03 Use ethical, safe, and responsible behavior relating to issues (e.g., security, privacy, passwords, personal information) and recognize possible consequences of misuse. 1
- 1.04 Recognize and discuss how Copyright Laws protect ownership of intellectual property and identify and discuss consequences of misuse. 1
- 1.05 Investigate technology knowledge and skills needed for the workplace now and in the future. 1
- 1.06 Demonstrate knowledge of why databases are used to collect, organize, and report information in a variety of settings. 2
- 1.07 Use knowledge of database terms/concepts, functions, and operations to describe and explain content area findings. 2
- 1.08 Cite sources of information used in content area databases. 2
- 1.09 Demonstrate knowledge that spreadsheets are used to process information in a variety of settings (e.g., schools, government, business, industry, mathematics, science). 3
- 1.10 Use spreadsheet and graphing terms/concepts to present and explain content area assignments. 3
- 1.11 Cite sources of information used in content area spreadsheets. 3

## Agora Cyber Charter School – Academic Curriculum

- 1.12 Demonstrate knowledge of the advantages/disadvantages of using word processing to develop, publish, and present information to a variety of audiences. 4
- 1.13 Demonstrate knowledge and use of WP/DTP terms/concepts (e.g., columns, tables, using multiple files and/or applications) to create and publish assignments/projects. 4
- 1.14 Demonstrate appropriate use of copyrighted materials in word processing documents used for content projects/assignments. 4
- 1.15 Demonstrate knowledge of multimedia tools/concepts used by media (e.g., games, video, radio/TV broadcasts, websites) to entertain, sell, and influence ideas and opinions. 5
- 1.16 Demonstrate knowledge of multimedia by using terms/concepts to describe and explain content projects/products. 5
- 1.17 Recognize, discuss, and establish ethical guidelines for use of personal and copyrighted media (e.g., images, music, video, content, language) in multimedia projects and presentations. 5
- 1.18 Recognize, discuss, and model correctly formatted citations for copyrighted materials and adhere to Fair Use Guidelines. 5
- 1.19 Recognize and use terms/concepts (e.g., IP address, Intranet, private networks, discussion forum, threaded discussion). 6
- 1.20 Demonstrate knowledge of responsible, safe, and ethical use of networked digital information (e.g., Internet, mobile phone, wireless, LANs). 6
- 1.21 Demonstrate knowledge of Copyright and Fair Use Guidelines by explaining selection and use of Internet resources in content projects/assignments. 6

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

Objectives:

- 2.01 Demonstrate knowledge of strategies for identifying and solving minor hardware and software problems. 1
- 2.02 Enter/edit data and use spreadsheet features and functions to project outcomes and test simple “what if...” statements in content assignments. 3
- 2.03 Use proper keyboarding techniques to improve accuracy, speed, and general efficiency in computer operation. 4
- 2.04 Demonstrate knowledge and use of WP/DTP features (e.g., columns, tables, headers/footers) to format and publish content projects/products. 4
- 2.05 Use a variety of collaborative tools to survey, collect, communicate information for content area assignments. 6

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

Objectives:

- 3.01 Select and use appropriate technology tools to solve problems and make decisions in content areas. 1

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- 3.02 Select and use two or more criteria to organize, interpret, and display content data and explain strategies used. 2
- 3.03 Modify/edit databases to organize, analyze, interpret data, and create reports (e.g., documents, multimedia project, webpages). 2
- 3.04 Evaluate and use database data and reports to solve problems and make decisions in content areas. 2
- 3.05 Modify/create spreadsheets and graphs/charts to analyze and interpret data for content assignments. 3
- 3.06 Create/modify spreadsheets to test simple “what if…” statements to solve problems and make decisions in content areas. 3
- 3.07 Demonstrate use of WP/DTP features/functions to design, format, layout, and publish assignments. 4
- 3.08 Plan, design, and develop a multimedia product using data (e.g., graphs, charts, database reports) to present content information in the most effective way, citing sources. 5
- 3.09 Create/modify and use rubrics to evaluate multimedia presentations for elements (e.g., organization, content, design, appropriateness for target audience, effectiveness, ethical use of resources). 5
- 3.10 Select, evaluate, and use a variety of digital resources and information to research and present findings about Eastern Hemisphere: Africa, Asia, and Australia. 6
- 3.11 Use evaluation tools to select Internet resources and information for content and usefulness in content area assignments. 6

### Computer/Technology Skills - Grade 8

#### Focus Areas

- Responsible and safe use of online resources
- Using Copyright and Fair Use Guidelines
- Using spreadsheets and databases relevant to assignments
- Choosing charts/tables or graphs to best represent data
- Conducting online research and evaluating the information found
- Using word processing/desktop publishing for assignments/projects
- Selecting and using a variety of technological tools to develop projects in content areas

Strands: 1= Societal/Ethical Issues; 2 = Database; 3 = Spreadsheet; 4= Keyboard Utilization/Word Processing/Desk Top Publishing; 5 = Multimedia/Presentation; 6 = Telecommunications/Internet

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

Objectives:

## Agora Cyber Charter School – Academic Curriculum

- 1.01 Demonstrate, discuss, and visually represent knowledge of changes in information technologies and the effect those changes have on Pennsylvania and society. 1
- 1.02 Use technology terms/concepts to describe and explain strategies used to collect, organize, and present findings for assignments/projects. 1
- 1.03 Model ethical behavior relating to security, privacy, passwords, and personal information, and recognize possible consequences of misuse. 1
- 1.04 Recognize and discuss how Copyright Laws protect ownership of intellectual property and identify and discuss consequences of misuse. 1
- 1.05 Investigate computer/technology-related careers/occupations in Pennsylvania, past, present, and future. 1
- 1.06 Demonstrate knowledge of and explain how databases are used in an information-intensive society. 2
- 1.07 Use knowledge of database terms/concepts, functions, and operations to explain strategies used to organize, analyze, and report information in content area assignments. 2
- 1.08 Cite sources of information used in content area databases. 2
- 1.09 Recognize, discuss, and investigate how spreadsheets in a variety of settings (e.g., schools, government, business, industry, transportation, communications). 3
- 1.10 Use spreadsheet and graphing terms/concepts to present and explain content area assignments. 3
- 1.11 Cite sources of information used in content area spreadsheets. 3
- 1.12 Demonstrate knowledge of the advantages/disadvantages of using word processing to develop, publish, and present information to a variety of audiences. 4
- 1.13 Review and use WP/DTP terms/concepts to describe and explain how assignments/projects were created. 4
- 1.14 Demonstrate appropriate use of copyrighted materials in word processing documents used for content projects/assignments. 4
- 1.15 Demonstrate knowledge of multimedia tools/concepts used by media (e.g., games, video, radio/TV broadcasts, websites) to entertain, sell and influence ideas and opinions. 5
- 1.16 Use multimedia terms/concepts correctly to describe and explain projects/products. 5
- 1.17 Recognize, discuss, and establish ethical guidelines for use of personal and copyrighted media (e.g., images, music, video, content, language) in multimedia projects and presentations. 5
- 1.18 Recognize, discuss, and model correctly formatted citations for copyrighted materials and adhere to Fair Use Guidelines. 5
- 1.19 Use appropriate terms/concepts to describe telecommunications tools and resources used to develop and complete assignments. 6
- 1.20 Demonstrate knowledge of responsible, safe, and ethical use of networked digital information (e.g., Internet, mobile phone, wireless, LANs). 6
- 1.21 Demonstrate knowledge of Copyright and Fair Use Guidelines by explaining selection and use of Internet resources in content projects/assignments. 6

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

Objectives:

- 2.01 Recognize and describe strategies for identifying, solving, and preventing minor hardware and software problems. 1
- 2.02 Modify/create and use databases to organize, report, and display data. 2
- 2.03 Select and use spreadsheet formulas and functions to solve problems in content areas. 3
- 2.04 Use spreadsheet features/functions to calculate and present findings for content area assignments. 3
- 2.05 Use proper keyboarding techniques to improve accuracy, speed, and general efficiency in computer operation. 4
- 2.06 Select and justify use of appropriate collaborative tools to survey, collect, share, and communicate information in content areas. 6

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

Objectives:

- 3.01 Select and use a variety of technology tools to collect, analyze, and present information. 1
- 3.02 Select and use appropriate database features and functions to collect, organize information to solve problem in content areas and explain strategies used. 2
- 3.03 Modify/create and use databases to analyze, interpret, and evaluate data and report findings. 2
- 3.04 Create/modify spreadsheets to analyze and interpret information, test simple “what if...”, solve problems, and make decisions in content areas. 3
- 3.05 Select and use WP/DTP features/functions to develop, edit/revise, and publish documents/assignments. 4
- 3.06 Develop and use rubrics to evaluate the quality of published documents/projects for content, design, and appropriate use of resources. 4
- 3.07 Plan, design, and develop a multimedia product using data (e.g., graphs, charts, database reports) to present content information. 5
- 3.08 Create/modify and use rubrics to evaluate multimedia presentations for content, design, appropriateness for target audience, and effective and ethical use of resources.
- 3.09 Plan, select, evaluate, interpret and use a variety of digital resources to develop assignments/projects about Pennsylvania History. 6
- 3.10 Use evaluation tools to select Internet resources and information for content and usefulness in content area assignments. 6

PERFORMANCE INDICATORS FOR TECHNOLOGY—LITERATE STUDENTS

GRADES 6-8: All students should have opportunities to demonstrate the following performances.

Prior to completion of Grade 8, students will:

1. Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use. (1)
2. Demonstrate knowledge of current changes in information technologies and the effect those changes have on the workplace and society. (2)
3. Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse. (2)
4. Use content-specific tools, software, and simulations (e.g., environmental probes, graphing calculators, exploratory environments, Web tools) to support learning and research. (3)
5. Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum. (3, 6)
6. Design, develop, publish, and present products (e.g., Web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to audiences. (4, 5, 6)
7. Collaborate with peers, experts, and others using telecommunications and collaborative tools to investigate curriculum-related problems, issues, and information, and to develop solutions or products for audiences. (4, 5)
8. Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems. (5, 6)
9. Demonstrate an understanding of concepts underlying hardware, software, and connectivity, and of practical applications to learning and problem solving. (1, 6)
10. Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real-world problems. (2, 5, 6).

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() indicates NETS\*S Goal(s)

Computer/Technology Skills - Grades 9-12

Subject Area Objectives

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

Objectives for ALL content areas:

- 1.01 Practice Safe, responsible, and ethical behavior in using technology resources and information.
- 1.02 Identify issues surrounding complex technology environments.

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

Objectives for ALL content areas:

- 2.01 Practice and refine knowledge and skills in keyboarding/word processing/desktop publishing, spreadsheets, databases, multimedia, and telecommunications in preparing assignments and projects.
- 2.02 Select and use appropriate technology tools to efficiently collect, analyze, and display data.

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

Arts Education (Music, Visual Arts)

Objectives:

- 3.01 Select and use appropriate technology tools to efficiently collect, analyze, and display data.
- 3.02 Select and use appropriate technologies as a means of artistic expression.
- 3.03 Use electronic resources for research.
- 3.04 Use technological tools for assignments, projects, and presentations.
- 3.05 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

English

Objectives:

- 3.01 Use word processing and/or desktop publishing for a variety of writing assignments/projects.
- 3.02 Use electronic resources for research.
- 3.03 Select and use technological tools for assignments, projects, and presentations.
- 3.04 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

World Languages

Objectives:

- 3.01 Select and use appropriate technologies to communicate in other languages with other cultures.
- 3.02 Select and use technological tools for assignments, projects, and presentations.
- 3.03 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

Health Education

Objectives:

## Agora Cyber Charter School – Academic Curriculum

- 3.01 Select and use appropriate technology tools to efficiently collect, analyze, and display data.
- 3.02 Use technology for experiments and/or research.
- 3.03 Use electronic resources for research.
- 3.04 Select and use technological tools for assignments, projects, and presentations.
- 3.05 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

### Mathematics

#### Objectives:

- 3.01 Select and use appropriate technology tools to efficiently collect, analyze, and display data.
- 3.02 Use spreadsheets to solve problems and display data.
- 3.03 Use a calculator, scientific calculator, or graphing calculator for problem-solving.
- 3.04 Select and use technological tools for assignments, projects, and presentations.
- 3.05 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

### Science

#### Objectives:

- 3.01 Use scientific instruments to perform experiments.
- 3.02 Use appropriate technology tools to efficiently collect, analyze, and display data.
- 3.03 Use electronic resources for research.
- 3.04 Use spreadsheets and/or databases to collect, record, analyze, and present data.
- 3.05 Select and use technology tools for presentations.
- 3.06 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

### Social Studies

#### Objectives:

- 3.01 Select and use appropriate technology tools to efficiently collect, analyze, and display data.
- 3.02 Use databases to collect, record, analyze, and display data.
- 3.03 Use electronic resources for research.
- 3.04 Select and use technological tools for assignments, projects, and presentations.
- 3.05 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

### Career – Technical Education (Agricultural Education, Business and Marketing, Industrial Technology and Human Services, Biotechnology, Health Care, and Career Development)

#### Objectives:

- 3.01 Select and use appropriate technologies to prepare for the workplace.
- 3.02 Use electronic resources for research.
- 3.03 Select and use technological tools for assignments, projects, and presentations.
- 3.04 Adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects, and multimedia presentations.

#### PERFORMANCE INDICATORS FOR TECHNOLOGY—LITERATE STUDENTS

GRADES 9-12: All students should have opportunities to demonstrate the following performances.

Prior to completion of Grade 12, students will:

1. Identify capabilities and limitations of contemporary and emerging technology resources and assess the potential of these systems and services to address personal, lifelong learning, and workplace needs. (2)
2. Make informed choices among technology systems, resources, and services. (1, 2)
3. Analyze advantages and disadvantages of widespread use and reliance on technology in the workplace and in society as a whole. (2)
4. Demonstrate and advocate for legal and ethical behaviors among peers, family, and community regarding the use of technology and information. (2)
5. Use technology tools and resources for managing and communicating personal/professional information (e.g., finances, schedules, addresses, purchases, correspondence). (3, 4)
6. Evaluate technology-based options, including distance and distributed education, for lifelong learning. (5)
7. Routinely and efficiently use online information resources to meet needs for collaboration, research, publications, communications, and productivity. (4, 5, 6)
8. Select and apply technology tools for research, information analysis, problem-solving, and decision-making in content learning. (4, 5)
9. Investigate and apply expert systems, intelligent agents, and simulations in real-world situations. (3, 5, 6)
10. Collaborate with peers, experts, and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works. (4, 5, 6)