

## Texas Essential Knowledge and Skills – Fifth Grade

### **§110.7. English Language Arts and Reading, Grade 5.**

#### (a) Introduction.

(1) In Grade 5, students refine and master previously learned knowledge and skills in increasingly complex presentations, reading selections, and written compositions. Fifth grade students can identify a speaker's persuasive technique such as promises, dares, and flattery in presentations. Students read from classic and contemporary selections and informational text. Fifth grade students are able to judge the internal consistency or logic of stories and texts. Students recognize the way an author organizes information and engage in more sophisticated analysis of characters, plots, and settings. Fifth grade students are able to select and use different forms of writing for specific purposes such as to inform, persuade, or entertain. Students vary sentence structure and use conjunctions to connect ideas. Students are able to use literary devices such as suspense, dialogue, and figurative language in their writing. Fifth grade students edit their writing based on their knowledge of grammar and usage, spelling, punctuation, and other conventions of written language. Students produce final, error-free pieces of written composition on a regular basis. Fifth grade students search out multiple texts to complete research reports or projects. Students use visuals to support their research projects.

(2) For fifth grade students whose first language is not English, the students' native language serves as a foundation for English language acquisition.

(3) The essential knowledge and skills as well as the student expectations for Grade 5 are described in subsection (b) of this section. Following each statement of a student expectation is a parenthetical notation that indicates the additional grades at which these expectations are demonstrated at increasingly sophisticated levels.

(4) To meet Public Education Goal 1 of the Texas Education Code, §4.002, which states, "The students in the public education system will demonstrate exemplary performance in the reading and writing of the English language," students will accomplish the essential knowledge and skills as well as the student expectations for Grade 5 as described in subsection (b) of this section.

(5) To meet Texas Education Code, §28.002(h), which states, ". . . each school district shall foster the continuation of the tradition of teaching United States and Texas history and the free enterprise system in regular subject matter and in reading courses and in the adoption of textbooks," students will be provided oral and written narratives as well as other informational texts that can help them to become thoughtful, active citizens who appreciate the basic democratic values of our state and nation.

#### (b) Knowledge and skills.

(1) Listening/speaking/purposes. The student listens actively and purposefully in a variety of settings. The student is expected to:

(A) determine the purposes for listening such as to gain information, to solve problems, or to enjoy and appreciate (4-8);

(B) eliminate barriers to effective listening (4-8); and

(C) understand the major ideas and supporting evidence in spoken messages (4-8).

(2) Listening/speaking/critical listening. The student listens critically to analyze and evaluate a speaker's message(s). The student is expected to:

(A) interpret speakers' messages (both verbal and nonverbal), purposes, and perspectives (4-8);

(B) identify and analyze a speaker's persuasive techniques such as promises, dares, and flattery (4-5);

(C) distinguish between the speaker's opinion and verifiable fact (4-8); and

(D) monitor his/her own understanding of the spoken message and seek clarification as needed (4-8).

(3) Listening/speaking/appreciation. The student listens to enjoy and appreciate spoken language. The student is expected to:

(A) listen to proficient, fluent models of oral reading, including selections from classic and contemporary works (4-8);

(B) describe how the language of literature affects the listener (4-5); and

(C) assess how language choice and delivery affect the tone of the message (4-5).

(4) Listening/speaking/culture. The student listens and speaks to gain and share knowledge of his/her own culture, the culture of others, and the common elements of cultures. The student is expected to:

(A) connect his/her own experiences, information, insights, and ideas with the experiences of others through speaking and listening (4-8);

(B) compare oral traditions across regions and cultures (4-8); and

(C) identify how language use such as labels and sayings reflects regions and cultures (4-8).

(5) Listening/speaking/audiences. The student speaks clearly and appropriately to different audiences for different purposes and occasions. The student is expected to:

(A) adapt spoken language such as word choice, diction, and usage to the audience, purpose, and occasion (4-8);

- (B) demonstrate effective communications skills that reflect demands such as interviewing, reporting, requesting, and providing information (4-8);
- (C) present dramatic interpretations of experiences, stories, poems, or plays to communicate (4-8);
- (D) use effective rate, volume, pitch, and tone for the audience and setting (4-8);
- (E) give precise directions and instructions such as for games and tasks (4-5); and
- (F) clarify and support spoken ideas with evidence, elaborations, and examples (4-8).

(6) Reading/word identification. The student uses a variety of word identification strategies. The student is expected to:

- (A) apply knowledge of letter-sound correspondences, language structure, and context to recognize words (4-8);
- (B) use structural analysis to identify root words with prefixes such as dis-, non-, and in-; and suffixes such as -ness, -tion, and -able (4-6); and
- (C) locate the meanings, pronunciations, and derivations of unfamiliar words using dictionaries, glossaries, and other sources (4-8).

(7) Reading/fluency. The student reads with fluency and understanding in texts at appropriate difficulty levels. The student is expected to:

- (A) read regularly in independent-level materials (texts in which no more than approximately 1 in 20 words is difficult for the reader) (5);
- (B) read regularly in instructional-level materials that are challenging but manageable (texts in which no more than approximately 1 in 10 words is difficult for the reader; a "typical" 5th grader reads approximately 100 wpm) (5);
- (C) demonstrate characteristics of fluent and effective reading (4-6);
- (D) adjust reading rate based on purposes for reading (4-8);
- (E) read aloud in selected texts in ways that both reflect understanding of the text and engage the listeners (4-8); and
- (F) read silently with increasing ease for longer periods (4-8).

(8) Reading/variety of texts. The student reads widely for different purposes in varied sources. The student is expected to:

- (A) read classic and contemporary works (2-8);

(B) select varied sources such as nonfiction, novels, textbooks, newspapers, and magazines when reading for information or pleasure (4-5); and

(C) read for varied purposes such as to be informed, to be entertained, to appreciate the writer's craft, and to discover models for his/her own writing (4-8).

(9) Reading/vocabulary development. The student acquires an extensive vocabulary through reading and systematic word study. The student is expected to:

(A) develop vocabulary by listening to selections read aloud (4-8);

(B) draw on experiences to bring meanings to words in context such as interpreting figurative language and multiple-meaning words (4-5);

(C) use multiple reference aids, including a thesaurus, a synonym finder, a dictionary, and software, to clarify meanings and usage (4-8);

(D) determine meanings of derivatives by applying knowledge of the meanings of root words such as like, pay, or happy and affixes such as dis-, pre-, and un- (4-8); and

(E) study word meanings systematically such as across curricular content areas and through current events (4-8).

(10) Reading/comprehension. The student comprehends selections using a variety of strategies. The student is expected to:

(A) use his/her own knowledge and experience to comprehend (4-8);

(B) establish and adjust purposes for reading such as reading to find out, to understand, to interpret, to enjoy, and to solve problems (4-8);

(C) monitor his/her own comprehension and make modifications when understanding breaks down such as by rereading a portion aloud, using reference aids, searching for clues, and asking questions (4-8);

(D) describe mental images that text descriptions evoke (4-8);

(E) use the text's structure or progression of ideas such as cause and effect or chronology to locate and recall information (4-8);

(F) determine a text's main (or major) ideas and how those ideas are supported with details (4-8);

(G) paraphrase and summarize text to recall, inform, or organize ideas (4-8);

(H) draw inferences such as conclusions or generalizations and support them with text evidence and experience (4-8);

(I) find similarities and differences across texts such as in treatment, scope, or organization (4-8);

(J) distinguish fact and opinion in various texts (4-8);

(K) answer different types and levels of questions such as open-ended, literal, and interpretative as well as test-like questions such as multiple choice, true-false, and short-answer (4-8); and

(L) represent text information in different ways such as in outline, timeline, or graphic organizer (4-8).

(11) Reading/literary response. The student expresses and supports responses to various types of texts. The student is expected to:

(A) offer observations, make connections, react, speculate, interpret, and raise questions in response to texts (4-8);

(B) interpret text ideas through such varied means as journal writing, discussion, enactment, and media (4-8);

(C) support responses by referring to relevant aspects of text and his/her own experiences (4-8); and

(D) connect, compare, and contrast ideas, themes, and issues across text (4-8).

(12) Reading/text structures/literary concepts. The student analyzes the characteristics of various types of texts (genres). The student is expected to:

(A) judge the internal consistency or logic of stories and texts such as "Would this character do this?"; "Does this make sense here?" (4-5);

(B) recognize that authors organize information in specific ways (4-5);

(C) identify the purposes of different types of texts such as to inform, influence, express, or entertain (4-8);

(D) recognize the distinguishing features of genres, including biography, historical fiction, informational texts, and poetry (4-8);

(E) compare communication in different forms such as contrasting a dramatic performance with a print version of the same story or comparing story variants (2-8);

(F) understand and identify literary terms such as title, author, illustrator, playwright, theater, stage, act, dialogue and scene across a variety of literary forms (texts) (3-5);

(G) understand literary forms by recognizing and distinguishing among such types of text as stories, poems, myths, fables, tall tales, limericks, plays, biographies, and autobiographies (3-7);

(H) analyze characters, including their traits, motivations, conflicts, points of view, relationships, and changes they undergo (4-8);

(I) recognize and analyze story plot, setting, and problem resolution (4-8); and

(J) describe how the author's perspective or point of view affects the text (4-8).

(13) Reading/inquiry/research. The student inquires and conducts research using a variety of sources. The student is expected to:

(A) form and revise questions for investigations, including questions arising from interest and units of study (4-5);

(B) use text organizers, including headings, graphic features, and tables of contents, to locate and organize information (4-8);

(C) use multiple sources, including electronic texts, experts, and print resources, to locate information relevant to research questions (4-8);

(D) interpret and use graphic sources of information such as maps, graphs, time lines, tables, or diagrams to address research questions (4-5);

(E) summarize and organize information from multiple sources by taking notes, outlining ideas, and making charts (4-8);

(F) produce research projects and reports in effective formats using visuals to support meaning as appropriate (4-5);

(G) draw conclusions from information gathered from multiple sources (4-8); and

(H) use compiled information and knowledge to raise additional, unanswered questions (3-8).

(14) Reading/culture. The student reads to increase knowledge of his/her own culture, the culture of others, and the common elements of cultures. The student is expected to:

(A) compare text events with his/her own and other readers' experiences (4-8);

(B) determine distinctive and common characteristics of cultures through wide reading (4-8); and

(C) articulate and discuss themes and connections that cross cultures (4-8).

(15) Writing/purposes. The student writes for a variety of audiences and purposes, and in a variety of forms. The student is expected to:

- (A) write to express, discover, record, develop, reflect on ideas, and to problem solve (4-8);
- (B) write to influence such as to persuade, argue, and request (4-8);
- (C) write to inform such as to explain, describe, report, and narrate (4-8);
- (D) write to entertain such as to compose humorous poems or short stories (4-8);
- (E) exhibit an identifiable voice in personal narratives and in stories (4-5);
- (F) choose the appropriate form for his/her own purpose for writing, including journals, letters, reviews, poems, narratives, and instructions (4-5); and
- (G) use literary devices effectively such as suspense, dialogue, and figurative language (5-8).

(16) Writing/penmanship/capitalization/punctuation. The student composes original texts, applying the conventions of written language, including capitalization, punctuation, and penmanship, to communicate clearly. The student is expected to:

- (A) write legibly by selecting cursive or manuscript as appropriate (4-8); and
- (B) capitalize and punctuate correctly to clarify and enhance meaning such as capitalizing titles, using possessives, commas in a series, commas in direct address, and sentence punctuation (4-5).

(17) Writing/spelling. The student spells proficiently. The student is expected to:

- (A) write with accurate spelling of syllable constructions, including closed, open, consonant before -le, and syllable boundary patterns (3-6);
- (B) write with accurate spelling of roots such as drink, speak, read, or happy, inflections such as those that change tense or number, suffixes such as -able or -less, and prefixes such as re- or un- (4-6);
- (C) use resources to find correct spellings (4-8); and
- (D) spell accurately in final drafts (4-8).

(18) Writing/grammar/usage. The student applies standard grammar and usage to communicate clearly and effectively in writing. The student is expected to:

- (A) use regular and irregular plurals correctly (4-6);

(B) write in complete sentences, varying the types such as compound and complex to match meanings and purposes (4-5);

(C) employ standard English usage in writing for audiences, including subject-verb agreement, pronoun referents, and parts of speech (4-8);

(D) use adjectives (comparative and superlative forms) and adverbs appropriately to make writing vivid or precise (4-8);

(E) use prepositional phrases to elaborate written ideas (4-8);

(F) use conjunctions to connect ideas meaningfully (4-5);

(G) write with increasing accuracy when using apostrophes in contractions such as it's and possessives such as Jan's (4-8); and

(H) write with increasing accuracy when using objective case pronouns such as "Can you ride with my mom and me?" (4-5).

(19) Writing/writing processes. The student selects and uses writing processes for self-initiated and assigned writing. The student is expected to:

(A) generate ideas and plans for writing by using such prewriting strategies as brainstorming, graphic organizers, notes, and logs (4-8);

(B) develop drafts by categorizing ideas, organizing them into paragraphs, and blending paragraphs within larger units of text (4-8);

(C) revise selected drafts by adding, elaborating, deleting, combining, and rearranging text (4-8);

(D) revise drafts for coherence, progression, and logical support of ideas (4-8);

(E) edit drafts for specific purposes such as to ensure standard usage, varied sentence structure, and appropriate word choice (4-8);

(F) use available technology to support aspects of creating, revising, editing, and publishing texts (4-8);

(G) refine selected pieces frequently to "publish" for general and specific audiences (4-8);

(H) proofread his/her own writing and that of others (4-8); and

(I) select and use reference materials and resources as needed for writing, revising, and editing final drafts (4-8).

(20) Writing/evaluation. The student evaluates his/her own writing and the writing of others. The student is expected to:

- (A) apply criteria to evaluate writing (4-8);
- (B) respond in constructive ways to others' writing (4-8);
- (C) evaluate how well his/her own writing achieves its purposes (4-8);
- (D) analyze published examples as models for writing (4-8); and
- (E) review a collection of written works to determine its strengths and weaknesses and to set goals as a writer (4-8).

(21) Writing/inquiry/research. The student uses writing as a tool for learning and research. The student is expected to:

- (A) frame questions to direct research (4-8);
- (B) organize prior knowledge about a topic in a variety of ways such as by producing a graphic organizer (4-8);
- (C) take notes from relevant and authoritative sources such as guest speakers, periodicals, or on-line searches (4-8);
- (D) summarize and organize ideas gained from multiple sources in useful ways such as outlines, conceptual maps, learning logs, and timelines (4-8);
- (E) present information in various forms using available technology (4-8); and
- (F) evaluate his/her own research and raise new questions for further investigation (4-8).

(22) Writing/connections. The student interacts with writers inside and outside the classroom in ways that reflect the practical uses of writing. The student is expected to:

- (A) collaborate with other writers to compose, organize, and revise various types of texts, including letters, news, records, and forms (4-8); and
- (B) correspond with peers or others via e-mail or conventional mail (4-8).

(23) Viewing/representing/interpretation. The student understands and interprets visual images, messages, and meanings. The student is expected to:

- (A) describe how illustrators' choice of style, elements, and media help to represent or extend the text's meanings (4-8);

(B) interpret important events and ideas gleaned from maps, charts, graphics, video segments or technology presentations (4-8); and

(C) use media to compare ideas and points of view (4-8).

(24) Viewing/representing/analysis. The student analyzes and critiques the significance of visual images, messages, and meanings. The student is expected to:

(A) interpret and evaluate the various ways visual image makers such as graphic artists, illustrators, and news photographers represent meanings (4-5); and

(B) compare and contrast print, visual, and electronic media such as film with written story (4-8).

(25) Viewing/representing/production. The student produces visual images, messages, and meanings that communicate with others. The student is expected to:

(A) select, organize, or produce visuals to complement and extend meanings (4-8); and

(B) produce communications using technology or appropriate media such as developing a class newspaper, multimedia reports, or video reports (4-8).

## §111.17. Mathematics, Grade 5.

### (a) Introduction.

(1) Within a well-balanced mathematics curriculum, the primary focal points at Grade 5 are comparing and contrasting lengths, areas, and volumes of two- or three-dimensional geometric figures; representing and interpreting data in graphs, charts, and tables; and applying whole number operations in a variety of contexts.

(2) Throughout mathematics in Grades 3-5, students build a foundation of basic understandings in number, operation, and quantitative reasoning; patterns, relationships, and algebraic thinking; geometry and spatial reasoning; measurement; and probability and statistics. Students use algorithms for addition, subtraction, multiplication, and division as generalizations connected to concrete experiences; and they concretely develop basic concepts of fractions and decimals. Students use appropriate language and organizational structures such as tables and charts to represent and communicate relationships, make predictions, and solve problems. Students select and use formal language to describe their reasoning as they identify, compare, and classify two- or three-dimensional geometric figures; and they use numbers, standard units, and measurement tools to describe and compare objects, make estimates, and solve application problems. Students organize data, choose an appropriate method to display the data, and interpret the data to make decisions and predictions and solve problems.

(3) Throughout mathematics in Grades 3-5, students develop numerical fluency with conceptual understanding and computational accuracy. Students in Grades 3-5 use knowledge of the base-ten place value system to compose and decompose numbers in order to solve problems requiring precision, estimation, and reasonableness. By the end of Grade 5, students know basic addition, subtraction, multiplication, and division facts and are using them to work flexibly, efficiently, and accurately with numbers during addition, subtraction, multiplication, and division computation.

(4) Problem solving, language and communication, connections within and outside mathematics, and formal and informal reasoning underlie all content areas in mathematics. Throughout mathematics in Grades 3-5, students use these processes together with technology and other mathematical tools such as manipulative materials to develop conceptual understanding and solve meaningful problems as they do mathematics.

### (b) Knowledge and skills.

(5.1) **Number, operation, and quantitative reasoning.** The student uses place value to represent whole numbers and decimals.

The student is expected to:

(A) use place value to read, write, compare, and order whole numbers through the 999,999,999,999; and

(B) use place value to read, write, compare, and order decimals through the thousandths place.

**(5.2) Number, operation, and quantitative reasoning.** The student uses fractions in problem-solving situations.

The student is expected to:

- (A) generate a fraction equivalent to a given fraction such as  $\frac{1}{2}$  and  $\frac{3}{6}$  or  $\frac{4}{12}$  and  $\frac{1}{3}$ ;
- (B) generate a mixed number equivalent to a given improper fraction or generate an improper fraction equivalent to a given mixed number;
- (C) compare two fractional quantities in problem-solving situations using a variety of methods, including common denominators; and
- (D) use models to relate decimals to fractions that name tenths, hundredths, and thousandths.

**(5.3) Number, operation, and quantitative reasoning.** The student adds, subtracts, multiplies, and divides to solve meaningful problems.

The student is expected to:

- (A) use addition and subtraction to solve problems involving whole numbers and decimals;
- (B) use multiplication to solve problems involving whole numbers (no more than three digits times two digits without technology);
- (C) use division to solve problems involving whole numbers (no more than two-digit divisors and three-digit dividends without technology), including interpreting the remainder within a given context;
- (D) identify common factors of a set of whole numbers; and
- (E) model situations using addition and/or subtraction involving fractions with like denominators using concrete objects, pictures, words, and numbers.

**(5.4) Number, operation, and quantitative reasoning.** The student estimates to determine reasonable results.

The student is expected to use strategies, including rounding and compatible numbers to estimate solutions to addition, subtraction, multiplication, and division problems.

**(5.5) Patterns, relationships, and algebraic thinking.** The student makes generalizations based on observed patterns and relationships.

The student is expected to:

(A) describe the relationship between sets of data in graphic organizers such as lists, tables, charts, and diagrams; and

(B) identify prime and composite numbers using concrete objects, pictorial models, and patterns in factor pairs.

**(5.6) Patterns, relationships, and algebraic thinking.** The student describes relationships mathematically.

The student is expected to select from and use diagrams and equations such as  $y = 5 + 3$  to represent meaningful problem situations.

**(5.7) Geometry and spatial reasoning.** The student generates geometric definitions using critical attributes.

The student is expected to identify essential attributes including parallel, perpendicular, and congruent parts of two- and three-dimensional geometric figures.

**(5.8) Geometry and spatial reasoning.** The student models transformations.

The student is expected to:

(A) sketch the results of translations, rotations, and reflections on a Quadrant I coordinate grid; and

(B) identify the transformation that generates one figure from the other when given two congruent figures on a Quadrant I coordinate grid.

**(5.9) Geometry and spatial reasoning.** The student recognizes the connection between ordered pairs of numbers and locations of points on a plane.

The student is expected to locate and name points on a coordinate grid using ordered pairs of whole numbers.

**(5.10) Measurement.** The student applies measurement concepts involving length (including perimeter), area, capacity/volume, and weight/mass to solve problems.

The student is expected to:

(A) perform simple conversions within the same measurement system (SI (metric) or customary);

(B) connect models for perimeter, area, and volume with their respective formulas; and

(C) select and use appropriate units and formulas to measure length, perimeter, area, and volume.

(5.11) **Measurement.** The student applies measurement concepts. The student measures time and temperature (in degrees Fahrenheit and Celsius).

The student is expected to:

- (A) solve problems involving changes in temperature; and
- (B) solve problems involving elapsed time.

(5.12) **Probability and statistics.** The student describes and predicts the results of a probability experiment.

The student is expected to:

- (A) use fractions to describe the results of an experiment;
- (B) use experimental results to make predictions; and
- (C) list all possible outcomes of a probability experiment such as tossing a coin.

(5.13) **Probability and statistics.** The student solves problems by collecting, organizing, displaying, and interpreting sets of data.

The student is expected to:

- (A) use tables of related number pairs to make line graphs;
- (B) describe characteristics of data presented in tables and graphs including median, mode, and range; and
- (C) graph a given set of data using an appropriate graphical representation such as a picture or line graph.

(5.14) **Underlying processes and mathematical tools.** The student applies Grade 5 mathematics to solve problems connected to everyday experiences and activities in and outside of school.

The student is expected to:

- (A) identify the mathematics in everyday situations;
- (B) solve problems that incorporate understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;
- (C) select or develop an appropriate problem-solving plan or strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and

(D) use tools such as real objects, manipulatives, and technology to solve problems.

**(5.15) Underlying processes and mathematical tools.** The student communicates about Grade 5 mathematics using informal language.

The student is expected to:

(A) explain and record observations using objects, words, pictures, numbers, and technology; and

(B) relate informal language to mathematical language and symbols.

**(5.16) Underlying processes and mathematical tools.** The student uses logical reasoning.

The student is expected to:

(A) make generalizations from patterns or sets of examples and nonexamples; and

(B) justify why an answer is reasonable and explain the solution process.

## §112.7. Science, Grade 5.

### (a) Introduction.

- (1) In Grade 5, the study of science includes planning and implementing field and laboratory investigations using scientific methods, analyzing information, making informed decisions, and using tools such as nets and cameras to collect and record information. Students also use computers and information technology tools to support scientific investigations.
- (2) As students learn science skills, they identify structures and functions of Earth systems including the crust, mantle, and core and the effect of weathering on landforms. Students learn that growth, erosion, and dissolving are examples of how some past events have affected present events. Students learn about magnetism, physical states of matter, and conductivity as properties that are used to classify matter. In addition, students learn that light, heat, and electricity are all forms of energy.
- (3) Students learn that adaptations can improve the survival of members of a species, and they explore an organism's niche within an ecosystem. Students continue the study of organisms by exploring a variety of traits that are inherited by offspring from their parents and study examples of learned characteristics.
- (4) Science is a way of learning about the natural world. Students should know how science has built a vast body of changing and increasing knowledge described by physical, mathematical, and conceptual models, and also should know that science may not answer all questions.
- (5) A system is a collection of cycles, structures, and processes that interact. Students should understand a whole in terms of its components and how these components relate to each other and to the whole. All systems have basic properties that can be described in terms of space, time, energy, and matter. Change and constancy occur in systems and can be observed and measured as patterns. These patterns help to predict what will happen next and can change over time.
- (6) Investigations are used to learn about the natural world. Students should understand that certain types of questions can be answered by investigations, and that methods, models, and conclusions built from these investigations change as new observations are made. Models of objects and events are tools for understanding the natural world and can show how systems work. They have limitations and based on new discoveries are constantly being modified to more closely reflect the natural world.

### (b) Knowledge and skills.

(1) Scientific processes. The student conducts field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to:

- (A) demonstrate safe practices during field and laboratory investigations; and

(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.

(2) Scientific processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:

(A) plan and implement descriptive and simple experimental investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology;

(B) collect information by observing and measuring;

(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence;

(D) communicate valid conclusions; and

(E) construct simple graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate information.

(3) Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;

(B) draw inferences based on information related to promotional materials for products and services;

(C) represent the natural world using models and identify their limitations;

(D) evaluate the impact of research on scientific thought, society, and the environment; and

(E) connect Grade 5 science concepts with the history of science and contributions of scientists.

(4) Scientific processes. The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:

(A) collect and analyze information using tools including calculators, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, compasses, balances, hot plates, meter sticks, timing devices, magnets, collecting nets, and safety goggles; and

(B) demonstrate that repeated investigations may increase the reliability of results.

(5) Science concepts. The student knows that a system is a collection of cycles, structures, and processes that interact. The student is expected to:

(A) describe some cycles, structures, and processes that are found in a simple system; and

(B) describe some interactions that occur in a simple system.

(6) Science concepts. The student knows that some change occurs in cycles. The student is expected to:

(A) identify events and describe changes that occur on a regular basis such as in daily, weekly, lunar, and seasonal cycles;

(B) identify the significance of the water, carbon, and nitrogen cycles; and

(C) describe and compare life cycles of plants and animals.

(7) Science concepts. The student knows that matter has physical properties. The student is expected to:

(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound;

(B) demonstrate that some mixtures maintain the physical properties of their ingredients;

(C) identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving sugar in water; and

(D) observe and measure characteristic properties of substances that remain constant such as boiling points and melting points.

(8) Science concepts. The student knows that energy occurs in many forms. The student is expected to:

(A) differentiate among forms of energy including light, heat, electrical, and solar energy;

(B) identify and demonstrate everyday examples of how light is reflected, such as from tinted windows, and refracted, such as in cameras, telescopes, and eyeglasses;

(C) demonstrate that electricity can flow in a circuit and can produce heat, light, sound, and magnetic effects; and

(D) verify that vibrating an object can produce sound.

(9) Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to:

(A) compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem;

(B) analyze and describe adaptive characteristics that result in an organism's unique niche in an ecosystem; and

(C) predict some adaptive characteristics required for survival and reproduction by an organism in an ecosystem.

(10) Science concepts. The student knows that likenesses between offspring and parents can be inherited or learned. The student is expected to:

(A) identify traits that are inherited from parent to offspring in plants and animals; and

(B) give examples of learned characteristics that result from the influence of the environment.

(11) Science concepts. The student knows that certain past events affect present and future events. The student is expected to:

(A) identify and observe actions that require time for changes to be measurable, including growth, erosion, dissolving, weathering, and flow;

(B) draw conclusions about "what happened before" using data such as from tree-growth rings and sedimentary rock sequences; and

(C) identify past events that led to the formation of the Earth's renewable, non-renewable, and inexhaustible resources.

(12) Science concepts. The student knows that the natural world includes earth materials and objects in the sky. The student is expected to:

(A) interpret how land forms are the result of a combination of constructive and destructive forces such as deposition of sediment and weathering;

(B) describe processes responsible for the formation of coal, oil, gas, and minerals;

(C) identify the physical characteristics of the Earth and compare them to the physical characteristics of the moon; and

(D) identify gravity as the force that keeps planets in orbit around the Sun and the moon in orbit around the Earth.

## §113.7. Social Studies, Grade 5.

### (a) Introduction.

(1) In Grade 5, students learn about the history of the United States from its early beginnings to the present with a focus on colonial times through the 20th century. Historical content includes the colonial and revolutionary periods, the establishment of the United States, and issues that led to the Civil War. An overview of major events and significant individuals of the late-19th century and the 20th century is provided. Students learn about a variety of regions in the United States that result from physical features and human activity and identify how people adapt to and modify the environment. Students explain the characteristics and benefits of the free enterprise system and describe economic activities in the United States. Students identify the roots of representative government in this nation as well as the important ideas in the Declaration of Independence and the U.S. Constitution. Students recite and explain the meaning of the Pledge of Allegiance. Students examine the importance of effective leadership in a democratic society and identify important leaders in the national government. Students examine fundamental rights guaranteed in the Bill of Rights. Students describe customs and celebrations of various racial, ethnic, and religious groups in the nation and identify the contributions of famous inventors and scientists. Students use critical-thinking skills including sequencing, categorizing, and summarizing information and drawing inferences and conclusions.

(2) To support the teaching of the essential knowledge and skills, the use of a variety of rich primary and secondary source material such as biographies; novels; speeches and letters; and poetry, songs, and artworks is encouraged. Selections may include Yankee Doodle. Motivating resources are also available from museums, historical sites, presidential libraries, and local and state preservation societies.

(3) The eight strands of the essential knowledge and skills for social studies are intended to be integrated for instructional purposes with the history and geography strands establishing a sense of time and a sense of place. Skills listed in the geography and social studies skills strands in subsection (b) of this section should be incorporated into the teaching of all essential knowledge and skills for social studies. A greater depth of understanding of complex content material can be attained when integrated social studies content from the various disciplines and critical-thinking skills are taught together.

(4) Throughout social studies in Kindergarten-Grade 12, students build a foundation in history; geography; economics; government; citizenship; culture; science, technology, and society; and social studies skills. The content, as appropriate for the grade level or course, enables students to understand the importance of patriotism, function in a free enterprise society, and appreciate the basic democratic values of our state and nation as referenced in the Texas Education Code, §28.002(h).

### (b) Knowledge and skills.

(1) History. The student understands the causes and effects of European colonization in the United States. The student is expected to:

(A) explain when, where, and why groups of people colonized and settled in the United States; and

(B) describe the accomplishments of significant colonial leaders such as Anne Hutchinson, William Penn, John Smith, and Roger Williams.

(2) History. The student understands how conflict between the American colonies and Great Britain led to American independence. The student is expected to:

(A) identify the contributions of significant individuals during the revolutionary period, including Thomas Jefferson and George Washington;

(B) analyze the causes and effects of events prior to and during the American Revolution such as the Boston Tea Party; and

(C) summarize the results of the American Revolution, including the establishment of the United States and the origins of U.S. military institutions.

(3) History. The student understands the events that led from the Articles of Confederation to the creation of the U.S. Constitution and the government it established. The student is expected to:

(A) identify the contributions of individuals including James Madison and Roger Sherman who helped create the U.S. Constitution; and

(B) summarize the events that led to the creation of the U.S. Constitution.

(4) History. The student understands political, economic, and social changes that occurred in the United States during the 19th century. The student is expected to:

(A) identify changes in society resulting from the Industrial Revolution and explain how these changes led to conflict among sections of the United States;

(B) identify reasons people moved west;

(C) identify examples of U.S. territorial expansion;

(D) describe the causes and effects of the Civil War;

(E) explain the reasons for and rights provided by the 13th, 14th, and 15th amendments to the U.S. Constitution;

(F) explain how industry and the mechanization of agriculture changed the American way of life; and

(G) identify the challenges, opportunities, and contributions of people from selected Native-American and immigrant groups.

(5) History. The student understands important issues, events, and individuals of the 20th century in the United States. The student is expected to:

(A) analyze various issues and events of the 20th century such as urbanization, industrialization, increased use of oil and gas, world wars, and the Great Depression; and

(B) identify the accomplishments of notable individuals such as Carrie Chapman Catt, Dwight Eisenhower, Martin Luther King, Jr., Rosa Parks, Colin Powell, and Franklin D. Roosevelt who have made contributions to society in the areas of civil rights, women's rights, military actions, and politics.

(6) Geography. The student uses geographic tools to collect, analyze, and interpret data. The student is expected to:

(A) apply geographic tools, including grid systems, legends, symbols, scales, and compass roses, to construct and interpret maps; and

(B) translate geographic data into a variety of formats such as raw data to graphs and maps.

(7) Geography. The student understands the concept of regions. The student is expected to:

(A) describe a variety of regions in the United States such as political, population, and economic regions that result from patterns of human activity;

(B) describe a variety of regions in the United States such as landform, climate, and vegetation regions that result from physical characteristics; and

(C) locate the fifty states on a map and identify regions such as New England and the Great Plains made up of various groups of states.

(8) Geography. The student understands the location and patterns of settlement and the geographic factors that influence where people live. The student is expected to:

(A) identify and describe the types of settlement and patterns of land use in the United States;

(B) describe clusters of settlement in the United States and explain their distribution;

(C) analyze the location of cities in the United States, including capital cities, and explain their distribution, past and present; and

(D) explain the geographic factors that influence patterns of settlement and the distribution of population in the United States, past and present.

(9) Geography. The student understands how people adapt to and modify their environment. The student is expected to:

(A) describe ways people have adapted to and modified their environment in the United States, past and present;

(B) identify reasons why people have adapted to and modified their environment in the United States, past and present, such as the use of human resources to meet basic needs; and

(C) analyze the consequences of human modification of the environment in the United States, past and present.

(10) Economics. The student understands the basic economic patterns of early societies in the United States. The student is expected to:

(A) explain the economic patterns of various early Native-American groups in the United States; and

(B) explain the economic patterns of early European colonists.

(11) Economics. The student understands the reasons for exploration and colonization. The student is expected to:

(A) identify the economic motivations for European exploration and settlement in the United States; and

(B) identify major industries of colonial America.

(12) Economics. The student understands the characteristics and benefits of the free enterprise system in the United States. The student is expected to:

(A) describe the development of the free enterprise system in colonial America and the United States;

(B) describe how the free enterprise system works in the United States; and

(C) give examples of the benefits of the free enterprise system in the United States.

(13) Economics. The student understands the impact of supply and demand on consumers and producers in a free enterprise system. The student is expected to:

(A) explain how supply and demand affects consumers in the United States; and

(B) evaluate the effects of supply and demand on business, industry, and agriculture, including the plantation system, in the United States.

(14) Economics. The student understands patterns of work and economic activities in the United States. The student is expected to:

(A) analyze how people in different parts of the United States earn a living, past and present;

(B) identify and explain how geographic factors have influenced the location of economic activities in the United States;

(C) analyze the effects of immigration, migration, and limited resources on the economic development and growth of the United States;

(D) describe the impact of mass production, specialization, and division of labor on the economic growth of the United States;

(E) analyze how developments in transportation and communication have influenced economic activities in the United States; and

(F) explain the impact of American ideas about progress and equality of opportunity on the economic development and growth of the United States.

(15) Government. The student understands how people organized governments in colonial America. The student is expected to:

(A) compare the systems of government of early European colonists; and

(B) identify examples of representative government in the American colonies, including the Mayflower Compact and the Virginia House of Burgesses.

(16) Government. The student understands important ideas in the Declaration of Independence and the U.S. Constitution. The student is expected to:

(A) identify the purposes and explain the importance of the Declaration of Independence; and

(B) explain the purposes of the U.S. Constitution as identified in the Preamble to the Constitution.

(17) Government. The student understands the framework of government created by the U.S. Constitution. The student is expected to:

(A) identify and explain the basic functions of the three branches of government;

(B) identify the reasons for and describe the system of checks and balances outlined in the U.S. Constitution; and

(C) distinguish between national and state governments and compare their responsibilities in the U.S. federal system.

(18) Citizenship. The student understands important customs, symbols, and celebrations that represent American beliefs and principles and contribute to our national identity. The student is expected to:

- (A) explain selected patriotic symbols and landmarks such as the Statue of Liberty and the White House and political symbols such as the donkey and elephant;
- (B) sing or recite The Star-Spangled Banner and explain its history;
- (C) recite and explain the meaning of the Pledge of Allegiance; and
- (D) describe the origins and significance of national celebrations such as Memorial Day, Labor Day, and Columbus Day.

(19) Citizenship. The student understands the importance of individual participation in the democratic process. The student is expected to:

- (A) explain how individuals can participate in civic affairs and political parties at the national level;
- (B) analyze the role of the individual in national elections;
- (C) identify significant individuals such as César Chávez and Benjamin Franklin who modeled active participation in the democratic process; and
- (D) explain how to contact elected and appointed leaders in the national governments.

(20) Citizenship. The student understands the importance of effective leadership in a democratic society. The student is expected to:

- (A) identify leaders in the national governments, including the president and selected members of Congress, and their political parties; and
- (B) identify and compare leadership qualities of national leaders, past and present.

(21) Citizenship. The student understands the fundamental rights of American citizens guaranteed in the Bill of Rights and other amendments to the U.S. Constitution. The student is expected to:

- (A) summarize the reasons for the creation of the Bill of Rights;
- (B) describe important individual rights including freedom of religion, speech, and press and the right to assemble and petition the government;
- (C) describe important due process rights including trial by jury and the right to an attorney; and

(D) summarize selected amendments to the U.S. Constitution such as those that extended voting rights of U.S. citizens.

(22) Culture. The student understands the relationship between the arts and the times during which they were created. The student is expected to:

(A) identify significant examples of art, music, and literature from various periods in U.S. history; and

(B) explain how examples of art, music, and literature reflect the times during which they were created.

(23) Culture. The student understands the contributions of people of various racial, ethnic, and religious groups to the United States. The student is expected to:

(A) identify the similarities and differences within and among selected racial, ethnic, and religious groups in the United States;

(B) describe customs, celebrations, and traditions of selected racial, ethnic, and religious groups in the United States; and

(C) summarize the contributions of people of selected racial, ethnic, and religious groups to our national identity.

(24) Science, technology, and society. The student understands the impact of science and technology on life in the United States. The student is expected to:

(A) describe the contributions of famous inventors and scientists such as Neil Armstrong, John J. Audubon, Benjamin Banneker, Clarence Birdseye, George Washington Carver, Thomas Edison, and Carl Sagan;

(B) identify how scientific discoveries and technological innovations such as the transcontinental railroad, the discovery of oil, and the rapid growth of technology industries have advanced the economic development of the United States;

(C) explain how scientific discoveries and technological innovations in the fields of medicine, communication, and transportation have benefited individuals and society in the United States;

(D) analyze environmental changes brought about by scientific discoveries and technological innovations such as air conditioning and fertilizers; and

(E) predict how future scientific discoveries and technological innovations could affect life in the United States.

(25) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of sources including electronic technology. The student is expected to:

(A) differentiate between, locate, and use primary and secondary sources such as computer software; interviews; biographies; oral, print, and visual material; and artifacts to acquire information about the United States and Texas;

(B) analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

(C) organize and interpret information in outlines, reports, databases, and visuals including graphs, charts, timelines, and maps;

(D) identify different points of view about an issue or topic;

(E) identify the elements of frame of reference that influenced the participants in an event; and

(F) use appropriate mathematical skills to interpret social studies information such as maps and graphs.

(26) Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:

(A) use social studies terminology correctly;

(B) incorporate main and supporting ideas in verbal and written communication;

(C) express ideas orally based on research and experiences;

(D) create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies; and

(E) use standard grammar, spelling, sentence structure, and punctuation.

(27) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings. The student is expected to:

(A) use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution; and

(B) use a decision-making process to identify a situation that requires a decision, gather information, identify options, predict consequences, and take action to implement a decision.

## **§114.2. Languages Other Than English, Elementary.**

School districts are strongly encouraged to offer languages other than English in the elementary grades. For districts that offer languages in elementary, the essential knowledge and skills are those designated as Levels I and II - novice progress checkpoint, exploratory languages, and cultural and linguistic topics in Subchapter C of this chapter (relating to Texas Essential Knowledge and Skills for Languages Other Than English).

## **§115.7. Health Education, Grade 5.**

### (a) Introduction.

(1) In health education, students acquire the health information and skills necessary to become healthy adults and learn about behaviors in which they should and should not participate. To achieve that goal, students will understand the following: students should first seek guidance in the area of health from their parents; personal behaviors can increase or reduce health risks throughout the lifespan; health is influenced by a variety of factors; students can recognize and utilize health information and products; and personal/interpersonal skills are needed to promote individual, family, and community health.

(2) In addition to age-appropriate information about personal health habits, students in Grade 5 are taught about the human body and the changes that come with puberty. Students are taught how to maintain healthy body systems and prevent disease. Students also learn how technology and the media influence personal health and how to apply problem-solving skills to improve or protect their health.

### (b) Knowledge and skills.

(1) Health information. The student knows ways to enhance and maintain personal health throughout the life span. The student is expected to:

- (A) examine and analyze food labels and menus for nutritional content;
- (B) apply information from the food guide pyramid to making healthy food choices;
- (C) identify foods that are sources of one or more of the six major nutrients;
- (D) calculate the relationship between caloric intake and energy expenditure;
- (E) differentiate between health-related and skill-related physical activities; and
- (F) analyze the components of a personal health maintenance plan for individuals and families such as stress management and personal safety.

(2) Health information. The student recognizes the basic structures and functions of the human body and how they relate to personal health throughout the life span. The student is expected to:

- (A) describe the structure, functions, and interdependence of major body systems; and
- (B) identify and describe changes in male and female anatomy that occur during puberty.

(3) Health information. The student knows how to utilize health information. The student is expected to:

(A) describe methods of accessing health information; and

(B) demonstrate ways to communicate health information such as posters, videos, and brochures.

(4) Health behaviors. The student recognizes behaviors that prevent disease and speed recovery from illness. The student is expected to:

(A) explain how to maintain the healthy status of body systems such as avoiding smoking to protect the lungs;

(B) relate the importance of immunizations in disease prevention;

(C) distinguish between myth and fact related to disease and disease prevention;

(D) list the effects of harmful viruses on the body such as polio, Human Immunodeficiency Virus (HIV), and the common cold; and

(E) explain how to manage common minor illnesses such as colds and skin infections.

(5) Health behaviors. The student comprehends behaviors that reduce health risks throughout the life span. The student is expected to:

(A) describe the use and abuse of prescription and non-prescription medications such as over-the-counter;

(B) compare and contrast the effects of medications and street drugs;

(C) analyze the short-term and long-term harmful effects of alcohol, tobacco, and other substances on the functions of the body systems such as physical, mental, social, and legal consequences;

(D) identify and describe alternatives to drug and substance use;

(E) demonstrate strategies for preventing and responding to deliberate and accidental injuries;

(F) explain strategies for avoiding violence, gangs, weapons and drugs;

(G) describe response procedures for emergency situations;

(H) describe the value of seeking advice from parents and educational personnel about unsafe behaviors; and

(I) explain the impact of neglect and abuse.

(6) Influencing factors. The student understands how relationships influence individual and family health including the skills necessary for building and maintaining relationships. The student is expected to:

- (A) distinguish between healthy and harmful influences of friends and others;
- (B) describe the characteristics of healthy and unhealthy friendships;
- (C) identify ways to enhance personal communication skills;
- (D) analyze respectful ways to communicate with family, adults, and peers;
- (E) demonstrate ways of communicating with individuals who communicate in unique ways such as having a speech defect and not speaking English;
- (F) apply and practice strategies for self-control; and
- (G) describe strategies for stress management.

(7) Influencing factors. The student comprehends ways in which media and technology influence individual and community health. The student is expected to:

- (A) research the effect of media on health-promoting behaviors; and
- (B) identify the use of health-related technology in the school such as audiometry and the Internet.

(8) Influencing factors. The student knows how various factors influence individual, family, and community health throughout the life span. The student is expected to:

- (A) explain the importance of communication skills as a major influence on the social and emotional health of the individual and family;
- (B) describe daily and weekly activities that promote the health of a family;
- (C) describe how a safe school environment relates to a healthy community; and
- (D) identify environmental protection programs that promote community health such as recycling, waste disposal, or safe food packaging.

(9) Personal/interpersonal skills. The student demonstrates critical-thinking, decision-making, goal-setting and problem-solving skills for making healthy decisions. The student is expected to:

- (A) describe health-related situations that require parent/adult assistance such as a discussion of the health-related consequences of high-risk health behaviors or going to a doctor;

- (B) assess the role of assertiveness, refusal skills, and peer pressure on decision making and problem solving;
- (C) utilize critical thinking in decision making and problem solving;
- (D) describe benefits in setting and implementing short and long-term goals;
- (E) explain the necessity of perseverance to achieve goals; and
- (F) explain the importance of parent/trusted adult guidance in goal setting.

## §116.7. Physical Education, Grade 5.

### (a) Introduction.

(1) In Physical Education, students acquire the knowledge and skills for movement that provide the foundation for enjoyment, continued social development through physical activity, and access to a physically-active lifestyle. The student exhibits a physically-active lifestyle and understands the relationship between physical activity and health throughout the lifespan.

(2) Fifth grade students demonstrate competence such as improved accuracy in manipulative skills in dynamic situations. Basic skills such as jumping rope, moving to a beat, and catching and throwing should have been mastered in previous years and can now be used in game-like situations. Students continue to assume responsibility for their own safety and the safety of others. Students can match different types of physical activities to health-related fitness components and explain ways to improve fitness based on the principle of frequency, intensity, and time. Students continue to learn the etiquette of participation and can resolve conflicts during games and sports in acceptable ways.

### (b) Knowledge and skills.

(1) Movement. The student demonstrates competency in movement patterns and proficiency in a few specialized movement forms. The student is expected to:

(A) demonstrate appropriate use of levels in dynamic movement situations such as jumping high for a rebound and bending knees and lowering center of gravity when guarding an opponent;

(B) demonstrate smooth combinations of fundamental locomotor skills such as running and dodging and hop-step-jump;

(C) demonstrate attention to form, power, accuracy, and follow-through in performing movement skills;

(D) demonstrate controlled balance on a variety of objects such as balance board, stilts, scooters, and skates;

(E) demonstrate simple stunts that exhibit agility such as jumping challenges with proper landings;

(F) combine traveling and rolling with smooth transitions;

(G) combine weight transfer and balance on mats and equipment;

(H) demonstrate the ability to contrast a partner's movement;

(I) perform selected folk dances;

(J) jump a rope using various rhythms and foot patterns repeatedly;

(K) demonstrate competence in manipulative skills in dynamic situations such as overhand throw, catch, shooting, hand dribble, foot dribble, kick, and striking activities such as hitting a softball; and

(L) demonstrate combinations of locomotor and manipulative skills in complex and/or game-like situations such as pivoting and throwing, twisting and striking, and running and catching.

(2) Movement. The student applies movement concepts and principles to the learning and development of motor skills. The student is expected to:

(A) identify common phases such as preparation, movement, follow through, or recovery in a variety of movement skills such as tennis serve, handstand, and free throw;

(B) identify the importance of various elements of performance for different stages during skill learning such as form, power, accuracy, and consistency; and

(C) choose appropriate drills/activities to enhance the learning of a specific skill.

(3) Physical activity and health. The student exhibits a health-enhancing, physically-active lifestyle that provides opportunities for enjoyment and challenge. The student is expected to:

(A) participate in moderate to vigorous physical activities on a daily basis that develop health-related fitness;

(B) identify appropriate personal fitness goals in each of the components of health-related fitness; and

(C) explain the value of participation in community physical activities such as little league and parks and recreation.

(4) Physical activity and health. The student knows the benefits from involvement in daily physical activity and factors that affect physical performance. The student is expected to:

(A) relate ways that aerobic exercise strengthens and improves the efficiency of the heart and lungs;

(B) self-monitor the heart rate during exercise;

(C) match different types of physical activity with health-related fitness components;

(D) define the principle of frequency, intensity, and time and describe how to incorporate these principles to improve fitness;

(E) describe the structure and function of the muscular and skeletal system as they relate to physical performance such as muscles pull on bones to cause movement, muscles work in pairs, and muscles work by contracting and relaxing;

(F) identify the relationship between optimal body function and a healthy eating plan such as eating a variety of foods in moderation according to U. S. dietary guidelines;

(G) describe common skeletal problems and their effect on the body such as spinal curvatures;

(H) describe the changes that occur in the cardiorespiratory system as a result of smoking and how those changes affect the ability to perform physical activity; and

(I) describe how movement and coordination are effected by alcohol and other drugs.

(5) Physical activity and health. The student understands and applies safety practices associated with physical activities. The student is expected to:

(A) use equipment safely and properly;

(B) select and use proper attire that promotes participation and prevents injury;

(C) describe the importance of taking personal responsibility for reducing hazards, avoiding accidents, and preventing injuries during physical activity; and

(D) identify potentially dangerous exercises and their adverse effects on the body.

(6) Social development. The student understands basic components such as strategies and rules of structured physical activities including, but not limited to, games, sports, dance, and gymnastics. The student is expected to:

(A) describe fundamental components and strategies used in net/wall, invasion, target, and fielding games such as basic positions-goalie, offense, or defense; and

(B) explain the concept and importance of team work.

(7) Social development. The student develops positive self-management and social skills needed to work independently and with others in physical activity settings. The student is expected to:

(A) follow rules, procedures, and etiquette;

(B) use sportsmanship skills for settling disagreements in socially acceptable ways such as remaining calm, identifying the problem, listening to others, generating solutions, or choosing a solution that is acceptable to all; and

(C) describe how physical activity with a partner or partners can increase motivation and enhance safety.

## §117.17. Art, Grade 5.

### (a) Introduction.

(1) Four basic strands--perception, creative expression/performance, historical and cultural heritage, and critical evaluation--provide broad, unifying structures for organizing the knowledge and skills students are expected to acquire. Students rely on their perceptions of the environment, developed through increasing visual awareness and sensitivity to surroundings, memory, imagination, and life experiences, as a source for creating artworks. They express their thoughts and ideas creatively, while challenging their imagination, fostering reflective thinking, and developing disciplined effort and problem-solving skills.

(2) By analyzing artistic styles and historical periods students develop respect for the traditions and contributions of diverse cultures. Students respond to and analyze artworks, thus contributing to the development of lifelong skills of making informed judgments and evaluations.

### (b) Knowledge and skills.

(1) Perception. The student develops and organizes ideas from the environment. The student is expected to:

(A) communicate ideas about feelings, self, family, school, and community, using sensory knowledge and life experiences; and

(B) identify in artworks that color, texture, form, line, space, and value are basic art elements and that the principles such as emphasis, pattern, rhythm, balance, proportion, and unity serve as organizers.

(2) Creative expression/performance. The student expresses ideas through original artworks, using a variety of media with appropriate skill. The student is expected to:

(A) combine information from direct observation, experience, and imagination to express ideas about self, family, and community;

(B) compare relationships between design and everyday life; and

(C) create original artworks and explore photographic imagery, using a variety of art materials and media appropriately.

(3) Historical/cultural heritage. The student demonstrates an understanding of art history and culture as records of human achievement. The student is expected to:

(A) compare artworks from several national periods, identifying similarities and differences;

(B) compare cultural themes honoring history and traditions in American and other artworks; and

(C) identify the use of art skills in a variety of jobs.

(4) Response/evaluation. The student makes informed judgments about personal artworks and the artworks of others. The student is expected to:

(A) analyze personal artworks to interpret meaning; and

(B) analyze original artworks, portfolios, and exhibitions by peers and others to form conclusions about properties.

## §117.18. Music, Grade 5.

### (a) Introduction.

(1) Four basic strands--perception, creative expression/performance, historical and cultural heritage, and critical evaluation--provide broad, unifying structures for organizing the knowledge and skills students are expected to acquire. In music, students develop their intellect and refine their emotions, understanding the cultural and creative nature of musical artistry and making connections among music, the other arts, technology, and other aspects of social life. Through creative performance, students apply the expressive technical skills of music and critical-thinking skills to evaluate multiple forms of problem solving.

(2) By reflecting on musical periods and styles, students understand music's role in history and are able to participate successfully in a diverse society. Students analyze and evaluate music, developing criteria for making critical judgments and informed choices.

### (b) Knowledge and skills.

(1) Perception. The student describes and analyzes musical sound and demonstrates musical artistry. The student is expected to:

(A) distinguish among a variety of musical timbres;

(B) use standard terminology in explaining music, music notation, musical instruments and voices, and musical performances; and

(C) identify a variety of music forms such as AB, ABA, rondo, and theme and variations.

(2) Creative expression/performance. The student sings or plays an instrument, individually and in groups, performing a varied repertoire of music. The student is expected to:

(A) perform independently, with accurate intonation and rhythm, demonstrating fundamental skills and basic performance techniques;

(B) perform expressively, from memory and notation, a varied repertoire of music representing styles from diverse cultures; and

(C) demonstrate appropriate small- and large-ensemble performance techniques during formal and informal concerts.

(3) Creative expression/performance. The student reads and writes music notation. The student is expected to:

(A) read standard notation;

(B) use standard symbols to notate meter, rhythm, and pitch in simple patterns (manuscript or computer-generated);

- (C) read and write music that incorporates rhythmic patterns in various meters; and
  - (D) identify music symbols and terms referring to dynamics, tempo, and articulation.
- (4) Creative expression/performance. The student creates and arranges music within specified guidelines. The student is expected to:
- (A) create rhythmic and melodic phrases; and
  - (B) create/arrange simple accompaniments.
- (5) Historical/cultural heritage. The student relates music to history, to society, and to culture. The student is expected to:
- (A) identify aurally-presented excerpts of music representing diverse genres, styles, periods, and cultures;
  - (B) describe various music vocations and avocations;
  - (C) perform music and movement from diverse cultures;
  - (D) perform music representative of American and Texas heritage; and
  - (E) identify concepts taught in the other fine arts and their relationships to music concepts.
- (6) Response/evaluation. The student responds to and evaluates music and musical performance. The student is expected to:
- (A) apply criteria in evaluating musical performances and compositions;
  - (B) evaluate, using music terminology, personal preferences for specific music works and styles; and
  - (C) exhibit concert etiquette as an actively involved listener during varied live performances.

## §117.19. Theatre, Grade 5.

### (a) Introduction.

(1) Four basic strands--perception, creative expression/performance, historical and cultural heritage, and critical evaluation--provide broad, unifying structures for organizing knowledge and skills students are expected to acquire. Through perceptual studies, students increase their understanding of self and others and develop clear ideas about the world. Through a variety of theatrical experiences, students communicate in a dramatic form, make artistic choices, solve problems, build positive self-concepts, and relate interpersonally.

(2) Students increase their understanding of heritage and traditions through historical and cultural studies in theatre. Student response and evaluation promote thinking and further discriminating judgment, developing students who are appreciative and evaluative consumers of live theatre, film, television, and other technologies.

### (b) Knowledge and skills.

(1) Perception. The student develops concepts about self, human relationships, and the environment, using elements of drama and conventions of theatre. The student is expected to:

- (A) develop characterization, using sensory and emotional recall;
- (B) develop body awareness and spatial perceptions, using pantomime;
- (C) respond to sounds, music, images, and the written word, using movement;
- (D) express emotions and relate ideas, using interpretive movement and dialogue;
- (E) integrate life experiences in dramatic play; and
- (F) portray environment, characterization, and actions.

(2) Creative expression/performance. The student interprets characters, using the voice and body expressively, and creates dramatizations. The student is expected to:

- (A) demonstrate safe use of the voice and body;
- (B) describe characters, their relationships, and their surroundings in detail;
- (C) select movements and portray a character, using dialogue appropriately; and
- (D) dramatize literary selections in pairs and various groupings and create simple stories collaboratively in improvisations and story dramatizations, describing the characters, their relationships, and their environments and demonstrating a logical connection of events.

(3) Creative expression/performance. The student applies design, directing, and theatre production concepts and skills. The student is expected to:

- (A) define character, environment, action, and theme, using props, costumes, and visual elements;
- (B) alter space appropriately to create a suitable environment for play-making;
- (C) plan brief dramatizations collaboratively; and
- (D) interact cooperatively with others in brief dramatizations.

(4) Historical/cultural heritage. The student relates theatre to history, society, and culture. The student is expected to:

- (A) relate theatre to life in particular times, places, and cultures; and
- (B) analyze the role of live theatre, film, television, and electronic media in American society.

(5) Response/evaluation. The student responds to and evaluates theatre and theatrical performances. The student is expected to:

- (A) analyze and apply appropriate audience behavior at a variety of performances;
- (B) define visual, aural, oral, and kinetic aspects of informal play-making and formal theatre and describe these components in art, dance, and music;
- (C) compare and contrast ideas and emotions depicted in theatre, dance, music, and art and select and explain the use of movement, music, or visual elements to enhance classroom dramatizations; and
- (D) analyze and compare theatre artists and their contributions.

### **§126.3. Technology Applications, Grades 3-5.**

#### **(a) Introduction.**

(1) The technology applications curriculum has four strands: foundations, information acquisition, work in solving problems, and communication.

(2) Through the study of technology applications foundations, including technology-related terms, concepts, and data input strategies, students learn to make informed decisions about technologies and their applications. The efficient acquisition of information includes the identification of task requirements; the plan for using search strategies; and the use of technology to access, analyze, and evaluate the acquired information. By using technology as a tool that supports the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create a solution, and evaluate the results. Students communicate information in different formats and to diverse audiences. A variety of technologies will be used. Students will analyze and evaluate the results.

#### **(b) Knowledge and skills.**

(1) Foundations. The student demonstrates knowledge and appropriate use of hardware components, software programs, and their connections. The student is expected to:

(A) use technology terminology appropriate to the task;

(B) save and delete files, uses menu options and commands, and work with more than one software application;

(C) identify and describe the characteristics of digital input, processing, and output;

(D) delineate and make necessary adjustments regarding compatibility issues including, but not limited to, digital file formats and cross platform connectivity; and

(E) access remote equipment on a network such as a printer or other peripherals.

(2) Foundations. The student uses data input skills appropriate to the task. The student is expected to:

(A) use a variety of input devices such as mouse, keyboard, disk drive, modem, voice/sound recorder, scanner, digital video, CD-ROM, or touch screen;

(B) use proper keyboarding techniques such as correct hand and body positions and smooth and rhythmic keystroke patterns;

(C) demonstrate touch keyboarding techniques for operating the alphabetic, numeric, punctuation, and symbol keys as grade-level appropriate;

(D) produce documents at the keyboard, proofread, and correct errors;

(E) use language skills including capitalization, punctuation, spelling, word division, and use of numbers and symbols as grade-level appropriate; and

(F) demonstrate an appropriate speed on short timed exercises depending upon the grade level and hours of instruction.

(3) Foundations. The student complies with the laws and examines the issues regarding the use of technology in society. The student is expected to:

(A) follow acceptable use policies when using computers; and

(B) model respect of intellectual property by not illegally copying software or another individual's electronic work.

(4) Information acquisition. The student uses a variety of strategies to acquire information from electronic resources, with appropriate supervision. The student is expected to:

(A) apply appropriate electronic search strategies in the acquisition of information including keyword and Boolean search strategies; and

(B) select appropriate strategies to navigate and access information on local area networks (LANs) and wide area networks (WANs), including the Internet and intranet, for research and resource sharing.

(5) Information acquisition. The student acquires electronic information in a variety of formats, with appropriate supervision. The student is expected to:

(A) acquire information including text, audio, video, and graphics; and

(B) use on-line help and documentation.

(6) Information acquisition. The student evaluates the acquired electronic information. The student is expected to:

(A) apply critical analysis to resolve information conflicts and validate information;

(B) determine the success of strategies used to acquire electronic information; and

(C) determine the usefulness and appropriateness of digital information.

(7) Solving problems. The student uses appropriate computer-based productivity tools to create and modify solutions to problems. The student is expected to:

(A) use software programs with audio, video, and graphics to enhance learning experiences;

(B) use appropriate software to express ideas and solve problems including the use of word processing, graphics, databases, spreadsheets, simulations, and multimedia; and

(C) use a variety of data types including text, graphics, digital audio, and video.

(8) Solving problems. The student uses research skills and electronic communication, with appropriate supervision, to create new knowledge. The student is expected to:

(A) use communication tools to participate in group projects;

(B) use interactive technology environments, such as simulations, electronic science or mathematics laboratories, virtual museum field trips, or on-line interactive lessons, to manipulate information; and

(C) participate with electronic communities as a learner, initiator, contributor, or mentor.

(9) Solving problems. The student uses technology applications to facilitate evaluation of work, both process and product. The student is expected to:

(A) use software features, such as on-line help, to evaluate work progress; and

(B) use software features, such as slide show previews, to evaluate final product.

(10) Communication. The student formats digital information for appropriate and effective communication. The student is expected to:

(A) use font attributes, color, white space, and graphics to ensure that products are appropriate for the defined audience;

(B) use font attributes, color, white space, and graphics to ensure that products are appropriate for the communication media including multimedia screen displays, Internet documents, and printed materials; and

(C) use appropriate applications including, but not limited to, spreadsheets and databases to develop charts and graphs by using data from various sources.

(11) Communication. The student delivers the product electronically in a variety of media, with appropriate supervision. The student is expected to:

(A) publish information in a variety of media including, but not limited to, printed copy, monitor display, Internet documents, and video; and

(B) use presentation software to communicate with specific audiences.

(12) Communication. The student uses technology applications to facilitate evaluation of communication, both process and product. The student is expected to:

(A) select representative products to be collected and stored in an electronic evaluation tool;

(B) evaluate the product for relevance to the assignment or task; and

(C) create technology assessment tools to monitor progress of project such as checklists, timelines, or rubrics.