§110.5. English Language Arts and Reading, Grade 3, Adopted 2017.

(a) Introduction.

(1) The English language arts and reading Texas Essential Knowledge and Skills (TEKS) embody the interconnected nature of listening, speaking, reading, writing, and thinking through the seven integrated strands of developing and sustaining foundational language skills; comprehension; response; multiple genres; author's purpose and craft; composition; and inquiry and research. The strands focus on academic oracy (proficiency in oral expression and comprehension), authentic reading, and reflective writing to ensure a literate Texas. The strands are integrated and progressive with students continuing to develop knowledge and skills with increased complexity and nuance in order to think critically and adapt to the ever-evolving nature of language and literacy.

(2) The seven strands of the essential knowledge and skills for English language arts and reading are intended to be integrated for instructional purposes and are recursive in nature. Strands include the four domains of language (listening, speaking, reading, writing) and their application in order to accelerate the acquisition of language skills so that students develop high levels of social and academic language proficiency. Although some strands may require more instructional time, each strand is of equal value, may be presented in any order, and should be integrated throughout the year. It is important to note that encoding (spelling) and decoding (reading) are reciprocal skills. Decoding is internalized when tactile and kinesthetic opportunities (encoding) are provided. Additionally, students should engage in academic conversations, write, read, and be read to on a daily basis with opportunities for cross-curricular content and student choice.

(3) Text complexity increases with challenging vocabulary, sophisticated sentence structures, nuanced text features, cognitively demanding content, and subtle relationships among ideas (Texas Education Agency, STAAR Performance Level Descriptors, 2013). As skills and knowledge are obtained in each of the seven strands, students will continue to apply earlier standards with greater depth to increasingly complex texts in multiple genres as they become self-directed, critical learners who work collaboratively while continuously using metacognitive skills.

(4) English language learners (ELLs) are expected to meet standards in a second language; however, their proficiency in English influences the ability to meet these standards. To
demonstrate this knowledge throughout the stages of English language acquisition, comprehension of text requires additional scaffolds such as adapted text, translations, native language support, cognates, summaries, pictures, realia, glossaries, bilingual dictionaries, thesauri, and other modes of comprehensible input. ELLs can and should be encouraged to use knowledge of their first language to enhance vocabulary development; vocabulary needs to be in the context of connected discourse so that it is meaningful. Strategic use of the student's first language is important to ensure linguistic, affective, cognitive, and academic development in English.

(5) Current research stresses the importance of effectively integrating second language acquisition with quality content area education in order to ensure that ELLs acquire social and academic language proficiency in English, learn the knowledge and skills, and reach their full academic potential. Instruction must be linguistically accommodated in accordance with the English Language Proficiency Standards (ELPS) and the student's English language proficiency levels to ensure the mastery of knowledge and skills in the required curriculum is accessible. For a further understanding of second language acquisition needs, refer to the ELPS and proficiency-level descriptors adopted in Chapter 74, Subchapter A, of this title (relating to Required Curriculum).

(6) Oral language proficiency holds a pivotal role in school success; verbal engagement must be maximized across grade levels (Kinsella, 2010). In order for students to become thinkers and proficient speakers in science, social studies, mathematics, fine arts, language arts and reading, and career and technical education, they must have multiple opportunities to practice and apply the academic language of each discipline (Fisher, Frey, & Rothenberg, 2008).

(7) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(b) Knowledge and skills.

(1) Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

(A) listen actively, ask relevant questions to clarify information, and make pertinent comments;

(B) follow, restate, and give oral instructions that involve a series of related sequences of action;

(C) speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;

(D) work collaboratively with others by following agreed-upon rules, norms, and protocols; and

(E) develop social communication such as conversing politely in all situations.

(2) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--beginning reading and writing. The student develops word structure knowledge through phonological awareness, print concepts, phonics, and morphology to communicate, decode, and spell. The student is expected to:

(A) demonstrate and apply phonetic knowledge by:
(i) decoding multisyllabic words with multiple sound-spelling patterns such as eigh, ough, and en;

(ii) decoding multisyllabic words with closed syllables; open syllables; VCe syllables; vowel teams, including digraphs and diphthongs; r-controlled syllables; and final stable syllables;

(iii) decoding compound words, contractions, and abbreviations;

(iv) decoding words using knowledge of syllable division patterns such as VCCV, VCV, and VCCCV with accent shifts;

(v) decoding words using knowledge of prefixes;

(vi) decoding words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants; and

(vii) identifying and reading high-frequency words from a research-based list;

(B) demonstrate and apply spelling knowledge by:

(i) spelling multisyllabic words with closed syllables; open syllables; VCe syllables; vowel teams, including digraphs and diphthongs; r-controlled syllables; and final stable syllables;

(ii) spelling homophones;

(iii) spelling compound words, contractions, and abbreviations;

(iv) spelling multisyllabic words with multiple sound-spelling patterns;

(v) spelling words using knowledge of syllable division patterns such as VCCV, VCV, and VCCCV;

(vi) spelling words using knowledge of prefixes; and

(vii) spelling words using knowledge of suffixes, including how they can change base words such as dropping e, changing y to i, and doubling final consonants;

(C) alphabetize a series of words to the third letter; and

(D) write complete words, thoughts, and answers legibly in cursive leaving appropriate spaces between words.

(3) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking—vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to:

(A) use print or digital resources to determine meaning, syllabication, and pronunciation;

(B) use context within and beyond a sentence to determine the meaning of unfamiliar words and multiple-meaning words;

(C) identify the meaning of and use words with affixes such as im- (into), non-, dis-, in- (not, non), pre-, -ness, -y, and -ful; and

(D) identify, use, and explain the meaning of antonyms, synonyms, idioms, homophones, and homographs in a text.
(4) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.

(5) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--self-sustained reading. The student reads grade-appropriate texts independently. The student is expected to self-select text and read independently for a sustained period of time.

(6) Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

(A) establish purpose for reading assigned and self-selected texts;
(B) generate questions about text before, during, and after reading to deepen understanding and gain information;
(C) make and correct or confirm predictions using text features, characteristics of genre, and structures;
(D) create mental images to deepen understanding;
(E) make connections to personal experiences, ideas in other texts, and society;
(F) make inferences and use evidence to support understanding;
(G) evaluate details read to determine key ideas;
(H) synthesize information to create new understanding; and
(I) monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.

(7) Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

(A) describe personal connections to a variety of sources, including self-selected texts;
(B) write a response to a literary or informational text that demonstrates an understanding of a text;
(C) use text evidence to support an appropriate response;
(D) retell and paraphrase texts in ways that maintain meaning and logical order;
(E) interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
(F) respond using newly acquired vocabulary as appropriate; and
(G) discuss specific ideas in the text that are important to the meaning.

(8) Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--literary elements. The student recognizes and analyzes literary elements within and across increasingly complex traditional, contemporary, classical, and diverse literary texts. The student is expected to:
(A) infer the theme of a work, distinguishing theme from topic;
(B) explain the relationships among the major and minor characters;
(C) analyze plot elements, including the sequence of events, the conflict, and the resolution; and
(D) explain the influence of the setting on the plot.

(9) Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student recognizes and analyzes genre-specific characteristics, structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to:
(A) demonstrate knowledge of distinguishing characteristics of well-known children's literature such as folktales, fables, fairy tales, legends, and myths;
(B) explain rhyme scheme, sound devices, and structural elements such as stanzas in a variety of poems;
(C) discuss elements of drama such as characters, dialogue, setting, and acts;
(D) recognize characteristics and structures of informational text, including:
   (i) the central idea with supporting evidence;
   (ii) features such as sections, tables, graphs, timelines, bullets, numbers, and bold and italicized font to support understanding; and
   (iii) organizational patterns such as cause and effect and problem and solution;
(E) recognize characteristics and structures of argumentative text by:
   (i) identifying the claim;
   (ii) distinguishing facts from opinion; and
   (iii) identifying the intended audience or reader; and
(F) recognize characteristics of multimodal and digital texts.

(10) Author's purpose and craft: listening, speaking, reading, writing, and thinking using multiple texts. The student uses critical inquiry to analyze the authors' choices and how they influence and communicate meaning within a variety of texts. The student analyzes and applies author's craft purposefully in order to develop his or her own products and performances. The student is expected to:
(A) explain the author's purpose and message within a text;
(B) explain how the use of text structure contributes to the author's purpose;
(C) explain the author's use of print and graphic features to achieve specific purposes;
(D) describe how the author's use of imagery, literal and figurative language such as simile, and sound devices such as onomatopoeia achieves specific purposes;
(E) identify the use of literary devices, including first- or third-person point of view;
(F) discuss how the author's use of language contributes to voice; and
(G) identify and explain the use of hyperbole.
(11) Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and uses appropriate conventions. The student is expected to:

(A) plan a first draft by selecting a genre for a particular topic, purpose, and audience using a range of strategies such as brainstorming, freewriting, and mapping;

(B) develop drafts into a focused, structured, and coherent piece of writing by:

(i) organizing with purposeful structure, including an introduction and a conclusion; and

(ii) developing an engaging idea with relevant details;

(C) revise drafts to improve sentence structure and word choice by adding, deleting, combining, and rearranging ideas for coherence and clarity;

(D) edit drafts using standard English conventions, including:

(i) complete simple and compound sentences with subject-verb agreement;

(ii) past, present, and future verb tense;

(iii) singular, plural, common, and proper nouns;

(iv) adjectives, including their comparative and superlative forms;

(v) adverbs that convey time and adverbs that convey manner;

(vi) prepositions and prepositional phrases;

(vii) pronouns, including subjective, objective, and possessive cases;

(viii) coordinating conjunctions to form compound subjects, predicates, and sentences;

(ix) capitalization of official titles of people, holidays, and geographical names and places;

(x) punctuation marks, including apostrophes in contractions and possessives and commas in compound sentences and items in a series; and

(xi) correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words; and

(E) publish written work for appropriate audiences.

(12) Composition: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student uses genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to:

(A) compose literary texts, including personal narratives and poetry, using genre characteristics and craft;

(B) compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft;

(C) compose argumentative texts, including opinion essays, using genre characteristics and craft; and

(D) compose correspondence such as thank you notes or letters.
Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:

- generate questions on a topic for formal and informal inquiry;
- develop and follow a research plan with adult assistance;
- identify and gather relevant information from a variety of sources;
- identify primary and secondary sources;
- demonstrate understanding of information gathered;
- recognize the difference between paraphrasing and plagiarism when using source materials;
- create a works cited page; and
- use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

§111.5. Mathematics, Grade 3, Adopted 2012.

(a) Introduction.

(1) The desire to achieve educational excellence is the driving force behind the Texas essential knowledge and skills for mathematics, guided by the college and career readiness standards. By embedding statistics, probability, and finance, while focusing on computational thinking, mathematical fluency, and solid understanding, Texas will lead the way in mathematics education and prepare all Texas students for the challenges they will face in the 21st century.

(2) The process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, algorithms, paper and pencil, and technology and techniques such as mental math, estimation, number sense, and generalization and abstraction to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, computer programs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(3) For students to become fluent in mathematics, students must develop a robust sense of number. The National Research Council's report, "Adding It Up," defines procedural fluency as "skill in carrying out procedures flexibly, accurately, efficiently, and appropriately." As students develop procedural fluency, they must also realize that true problem solving may take time, effort, and
perseverance. Students in Grade 3 are expected to perform their work without the use of calculators.

(4) The primary focal areas in Grade 3 are place value, operations of whole numbers, and understanding fractional units. These focal areas are supported throughout the mathematical strands of number and operations, algebraic reasoning, geometry and measurement, and data analysis. In Grades 3-5, the number set is limited to positive rational numbers. In number and operations, students will focus on applying place value, comparing and ordering whole numbers, connecting multiplication and division, and understanding and representing fractions as numbers and equivalent fractions. In algebraic reasoning, students will use multiple representations of problem situations, determine missing values in number sentences, and represent real-world relationships using number pairs in a table and verbal descriptions. In geometry and measurement, students will identify and classify two-dimensional figures according to common attributes, decompose composite figures formed by rectangles to determine area, determine the perimeter of polygons, solve problems involving time, and measure liquid volume (capacity) or weight. In data analysis, students will represent and interpret data.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(b) Knowledge and skills.

(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;
(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;
(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;
(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
(E) create and use representations to organize, record, and communicate mathematical ideas;
(F) analyze mathematical relationships to connect and communicate mathematical ideas; and
(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(2) Number and operations. The student applies mathematical process standards to represent and compare whole numbers and understand relationships related to place value. The student is expected to:

(A) compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate;
(B) describe the mathematical relationships found in the base-10 place value system through the hundred thousands place;
(C) represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers; and
(D) compare and order whole numbers up to 100,000 and represent comparisons using the symbols $>$, $<$, or $=$.

(3) Number and operations. The student applies mathematical process standards to represent and explain fractional units. The student is expected to:

(A) represent fractions greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 using concrete objects and pictorial models, including strip diagrams and number lines;

(B) determine the corresponding fraction greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 given a specified point on a number line;

(C) explain that the unit fraction $1/b$ represents the quantity formed by one part of a whole that has been partitioned into $b$ equal parts where $b$ is a non-zero whole number;

(D) compose and decompose a fraction $a/b$ with a numerator greater than zero and less than or equal to $b$ as a sum of parts $1/b$;

(E) solve problems involving partitioning an object or a set of objects among two or more recipients using pictorial representations of fractions with denominators of 2, 3, 4, 6, and 8;

(F) represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines;

(G) explain that two fractions are equivalent if and only if they are both represented by the same point on the number line or represent the same portion of a same size whole for an area model; and

(H) compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models.

(4) Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:

(A) solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction;

(B) round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems;

(C) determine the value of a collection of coins and bills;

(D) determine the total number of objects when equally-sized groups of objects are combined or arranged in arrays up to 10 by 10;

(E) represent multiplication facts by using a variety of approaches such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line, and skip counting;

(F) recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts;

(G) use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;
(H) determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally;
(I) determine if a number is even or odd using divisibility rules;
(J) determine a quotient using the relationship between multiplication and division; and
(K) solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts.

(5) Algebraic reasoning. The student applies mathematical process standards to analyze and create patterns and relationships. The student is expected to:
(A) represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations;
(B) represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations;
(C) describe a multiplication expression as a comparison such as $3 \times 24$ represents 3 times as much as 24;
(D) determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is either a missing factor or product; and
(E) represent real-world relationships using number pairs in a table and verbal descriptions.

(6) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional geometric figures to develop generalizations about their properties. The student is expected to:
(A) classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language;
(B) use attributes to recognize rhombuses, parallelograms, trapezoids, rectangles, and squares as examples of quadrilaterals and draw examples of quadrilaterals that do not belong to any of these subcategories;
(C) determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row;
(D) decompose composite figures formed by rectangles into non-overlapping rectangles to determine the area of the original figure using the additive property of area; and
(E) decompose two congruent two-dimensional figures into parts with equal areas and express the area of each part as a unit fraction of the whole and recognize that equal shares of identical wholes need not have the same shape.

(7) Geometry and measurement. The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving customary and metric measurement. The student is expected to:
(A) represent fractions of halves, fourths, and eighths as distances from zero on a number line;
(B) determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems;
(C) determine the solutions to problems involving addition and subtraction of time intervals in minutes using pictorial models or tools such as a 15-minute event plus a 30-minute event equals 45 minutes;

(D) determine when it is appropriate to use measurements of liquid volume (capacity) or weight; and

(E) determine liquid volume (capacity) or weight using appropriate units and tools.

(8) Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:

(A) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals; and

(B) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals.

(9) Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:

(A) explain the connection between human capital/labor and income;

(B) describe the relationship between the availability or scarcity of resources and how that impacts cost;

(C) identify the costs and benefits of planned and unplanned spending decisions;

(D) explain that credit is used when wants or needs exceed the ability to pay and that it is the borrower's responsibility to pay it back to the lender, usually with interest;

(E) list reasons to save and explain the benefit of a savings plan, including for college; and

(F) identify decisions involving income, spending, saving, credit, and charitable giving.


(a) Introduction.

(1) In Grade 3, students learn that the study of science uses appropriate tools and safe practices in planning and implementing investigations, asking and answering questions, collecting data by observing and measuring, and using models to support scientific inquiry about the natural world.

(A) Within the physical environment, students recognize that patterns, relationships, and cycles exist in matter. Students will investigate the physical properties of matter and will learn that changes occur. They explore mixtures and investigate light, sound, and thermal energy in everyday life. Students manipulate objects by pushing and pulling to demonstrate changes in motion and position.

(B) Within the natural environment, students investigate how the surface of Earth changes and provides resources that humans use. As students explore objects in the sky, they describe how relationships affect patterns and cycles on Earth. Students will construct models to demonstrate Sun, Earth, and Moon system relationships.

(C) Within the living environment, students explore patterns, systems, and cycles within environments by investigating characteristics of organisms, life cycles, and interactions among all components of the natural environment. Students
examine how the environment plays a key role in survival. Students know that when changes in the environment occur organisms may thrive, become ill, or perish.

(2) Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process."

(3) Recurring themes are pervasive in sciences, mathematics, and technology. These ideas transcend disciplinary boundaries and include patterns, cycles, systems, models, and change and constancy.

(4) The study of elementary science includes planning and safely implementing classroom and outdoor investigations using scientific practices, analyzing information, making informed decisions, and using tools to collect and record information while addressing the content and vocabulary in physical, earth, and life sciences. Districts are encouraged to facilitate classroom and outdoor investigations for at least 60% of instructional time.

(5) Statements containing the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(b) Knowledge and skills.

(1) Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures and environmentally appropriate practices. The student is expected to:

(A) demonstrate safe practices as described in Texas Education Agency-approved safety standards during classroom and outdoor investigations using safety equipment as appropriate, including safety goggles or chemical splash goggles, as appropriate, and gloves; and

(B) make informed choices in the use and conservation of natural resources by recycling or reusing materials such as paper, aluminum cans, and plastics.

(2) Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:

(A) plan and implement descriptive investigations, including asking and answering questions, making inferences, and selecting and using equipment or technology needed, to solve a specific problem in the natural world;

(B) collect and record data by observing and measuring using the metric system and recognize differences between observed and measured data;

(C) construct maps, graphic organizers, simple tables, charts, and bar graphs using tools and current technology to organize, examine, and evaluate measured data;

(D) analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations;

(E) demonstrate that repeated investigations may increase the reliability of results; and

(F) communicate valid conclusions supported by data in writing, by drawing pictures, and through verbal discussion.
(3) Scientific investigation and reasoning. The student knows that information, critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing;

(B) represent the natural world using models such as volcanoes or the Sun, Earth, and Moon system and identify their limitations, including size, properties, and materials; and

(C) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.

(4) Scientific investigation and reasoning. The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to collect, record, and analyze information using tools, including cameras, computers, hand lenses, metric rulers, Celsius thermometers, wind vanes, rain gauges, pan balances, graduated cylinders, beakers, spring scales, hot plates, meter sticks, magnets, collecting nets, notebooks, and Sun, Earth, and Moon system models; timing devices; and materials to support observation of habitats of organisms such as terrariums and aquariums.

(5) Matter and energy. The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is expected to:

(A) measure, test, and record physical properties of matter, including temperature, mass, magnetism, and the ability to sink or float;

(B) describe and classify samples of matter as solids, liquids, and gases and demonstrate that solids have a definite shape and that liquids and gases take the shape of their container;

(C) predict, observe, and record changes in the state of matter caused by heating or cooling such as ice becoming liquid water, condensation forming on the outside of a glass of ice water, or liquid water being heated to the point of becoming water vapor; and

(D) explore and recognize that a mixture is created when two materials are combined such as gravel and sand or metal and plastic paper clips.

(6) Force, motion, and energy. The student knows that forces cause change and that energy exists in many forms. The student is expected to:

(A) explore different forms of energy, including mechanical, light, sound, and thermal in everyday life;

(B) demonstrate and observe how position and motion can be changed by pushing and pulling objects such as swings, balls, and wagons; and

(C) observe forces such as magnetism and gravity acting on objects.

(7) Earth and space. The student knows that Earth consists of natural resources and its surface is constantly changing. The student is expected to:
(A) explore and record how soils are formed by weathering of rock and the decomposition of plant and animal remains;
(B) investigate rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides; and
(C) explore the characteristics of natural resources that make them useful in products and materials such as clothing and furniture and how resources may be conserved.

(8) Earth and space. The student knows there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:
(A) observe, measure, record, and compare day-to-day weather changes in different locations at the same time that include air temperature, wind direction, and precipitation;
(B) describe and illustrate the Sun as a star composed of gases that provides light and thermal energy;
(C) construct models that demonstrate the relationship of the Sun, Earth, and Moon, including orbits and positions; and
(D) identify the planets in Earth's solar system and their position in relation to the Sun.

(9) Organisms and environments. The student knows and can describe patterns, cycles, systems, and relationships within the environments. The student is expected to:
(A) observe and describe the physical characteristics of environments and how they support populations and communities of plants and animals within an ecosystem;
(B) identify and describe the flow of energy in a food chain and predict how changes in a food chain affect the ecosystem such as removal of frogs from a pond or bees from a field; and
(C) describe environmental changes such as floods and droughts where some organisms thrive and others perish or move to new locations.

(10) Organisms and environments. The student knows that organisms undergo similar life processes and have structures that help them survive within their environments. The student is expected to:
(A) explore how structures and functions of plants and animals allow them to survive in a particular environment; and
(B) investigate and compare how animals and plants undergo a series of orderly changes in their diverse life cycles such as tomato plants, frogs, and lady beetles.

(a) Introduction.
(1) In Grade 3, students learn how diverse individuals have changed their communities and world. Students study the effects inspiring heroes have had on communities, past and present. Students learn about the lives of heroic men and women who made important choices, overcame obstacles, sacrificed for the betterment of others, and embarked on journeys that resulted in new ideas, new inventions, new technologies, and new
communities. Students expand their knowledge through the identification and study of people who made a difference, influenced public policy and decision making, and participated in resolving issues that are important to all people. Throughout Grade 3, students develop an understanding of the economic, cultural, and scientific contributions made by individuals.

(2) To support the teaching of the essential knowledge and skills, the use of a variety of rich material such as biographies, founding documents, poetry, songs, and artworks is encouraged. Motivating resources are 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. Skills listed in the social studies skills strand 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. Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(4) Students identify the role of the U.S. free enterprise system within the parameters of this course and understand that this system may also be referenced as capitalism or the free market system.

(5) 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 (TEC), §28.002(h).

(6) Students understand that a constitutional republic is a representative form of government whose representatives derive their authority from the consent of the governed, serve for an established tenure, and are sworn to uphold the constitution.

(7) State and federal laws mandate a variety of celebrations and observances, including Celebrate Freedom Week.

(A) Each social studies class shall include, during Celebrate Freedom Week as provided under the TEC, §29.907, or during another full school week as determined by the board of trustees of a school district, appropriate instruction concerning the intent, meaning, and importance of the Declaration of Independence and the U.S. Constitution, including the Bill of Rights, in their historical contexts. The study of the Declaration of Independence must include the study of the relationship of the ideas expressed in that document to subsequent American history, including the relationship of its ideas to the rich diversity of our people as a nation of immigrants, the American Revolution, the formulation of the U.S. Constitution, and the abolitionist movement, which led to the Emancipation Proclamation and the women's suffrage movement.

(B) Each school district shall require that, during Celebrate Freedom Week or other week of instruction prescribed under subparagraph (A) of this paragraph, students in Grades 3-12 study and recite the following text from the Declaration of Independence: "We hold these Truths to be self-evident, that all Men are created equal, that they are endowed by their Creator with certain unalienable
Rights, that among these are Life, Liberty and the Pursuit of Happiness--That to secure these Rights, Governments are instituted among Men, deriving their just Powers from the Consent of the Governed."

Students discuss how and whether the actions of U.S. citizens and the local, state, and federal governments have achieved the ideals espoused in the founding documents.

(b) Knowledge and skills.

(1) History. The student understands how individuals, events, and ideas have influenced the history of various communities. The student is expected to:
   (A) describe how individuals, events, and ideas have changed communities, past and present;
   (B) identify individuals, including Pierre-Charles L'Enfant, Benjamin Banneker, and Benjamin Franklin, who have helped to shape communities; and
   (C) describe how individuals, including Daniel Boone and the Founding Fathers have contributed to the expansion of existing communities or to the creation of new communities.

(2) History. The student understands common characteristics of communities, past and present. The student is expected to:
   (A) identify reasons people have formed communities, including a need for security and laws, religious freedom, and material well-being; and
   (B) compare ways in which people in the local community and other communities meet their needs for government, education, communication, transportation, and recreation.

(3) Geography. The student understands how humans adapt to and/or modify the physical environment. The student is expected to:
   (A) describe similarities and differences in the physical environment, including climate, landforms, natural resources, and natural hazards;
   (B) identify and compare how people in different communities adapt to or modify the physical environment in which they live such as deserts, mountains, wetlands, and plains; and
   (C) describe the effects of human processes such as building new homes, conservation, and pollution in shaping the landscape.

(4) Geography. The student understands the concepts of location, distance, and direction on maps and globes. The student is expected to:
   (A) use cardinal and intermediate directions to locate places on maps and globes in relation to the local community;
   (B) use a scale to determine the distance between places on maps and globes; and
   (C) identify, create, and interpret maps of places that contain map elements, including a title, compass rose, legend, scale, and grid system.

(5) Economics. The student understands the purposes of earning, spending, saving, and donating money. The student is expected to:
   (A) identify ways of earning, spending, saving, and donating money; and
(B) create a simple budget that allocates money for spending and saving.

(6) Economics. The student understands the concept of the free enterprise system and how businesses operate in the U.S. free enterprise system. The student is expected to:
(A) explain how supply and demand affect the price of a good or service;
(B) define and identify examples of scarcity;
(C) explain how the cost of production and selling price affect profits; and
(D) identify individuals, past and present, such as Henry Ford and Sam Walton who have started new businesses.

(7) Government. The student understands the basic structure and functions of various levels of government. The student is expected to:
(A) describe the basic structure of government in the local community, state, and nation;
(B) identify local, state, and national government officials and explain how they are chosen; and
(C) identify services commonly provided by local, state, and national governments.

(8) Government. The student understands important ideas in historical documents at various levels of government. The student is expected to:
(A) identify the purposes of the Declaration of Independence and the U.S. Constitution, including the Bill of Rights; and
(B) describe the concept of "consent of the governed."

(9) Citizenship. The student understands characteristics of good citizenship as exemplified by historical and contemporary figures and organizations. The student is expected to:
(A) identify characteristics of good citizenship, including truthfulness, justice, equality, respect for oneself and others, responsibility in daily life, and participation in government by educating oneself about the issues, respectfully holding public officials to their word, and voting;
(B) identify figures such as Helen Keller, Clara Barton, and Ruby Bridges who exemplify good citizenship;
(C) identify and describe individual acts of civic responsibility, including obeying laws, serving and improving the community, serving on a jury, and voting; and
(D) identify examples of nonprofit and/or civic organizations such as the Red Cross and explain how they serve the common good.

(10) Culture. The student understands ethnic and/or cultural celebrations of the local community and other communities. The student is expected to:
(A) explain the significance of various ethnic and/or cultural celebrations in the local community and other communities; and
(B) compare ethnic and/or cultural celebrations in the local community with other communities.

(11) Culture. The student understands the role of heroes in shaping the culture of communities, the state, and the nation. The student is expected to:
(A) identify and describe the heroic deeds of state and national heroes and military
and first responders such as Hector P. Garcia, James A. Lovell, and the Four
Chaplains; and

(B) identify and describe the heroic deeds of individuals such as Harriet Tubman,
Todd Beamer, and other contemporary heroes.

(12) Culture. The student understands the importance of writers and artists to the cultural
heritage of communities. The student is expected to identify how various writers and
artists such as Kadir Nelson, Tomie dePaola, Carmen Lomas Garza, and Laura Ingalls
Wilder and their stories, poems, statues, and paintings contribute to the cultural heritage
of communities.

(13) Science, technology, and society. The student understands how individuals have created
or invented new technology and affected life in various communities, past and present.
The student is expected to:

(A) identify individuals who have discovered scientific breakthroughs or created or
invented new technology such as Jonas Salk, Cyrus McCormick, Bill Gates,
Louis Pasteur, and others; and

(B) describe the impact of scientific breakthroughs and new technology in
computers, pasteurization, and medical vaccines on various communities.

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

(A) gather information, including historical and current events and geographic data,
about the community using a variety of resources;

(B) interpret oral, visual, and print material by sequencing, categorizing, identifying
the main idea, distinguishing between fact and opinion, identifying cause and
effect, comparing, and contrasting; and

(C) interpret and create visuals, including graphs, charts, tables, timelines,
illustrations, and maps.

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

(A) use social studies terminology correctly;

(B) create and interpret timelines;

(C) apply the terms year, decade, and century to describe historical times;

(D) express ideas orally based on knowledge and experiences; and

(E) create written and visual material such as stories, pictures, maps, and graphic
organizers to express ideas.

(16) Social studies skills. The student uses problem-solving and decision-making skills,
working independently and with others. The student is expected to use problem-solving
and decision-making processes 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.
§114.4. Languages Other Than English, Elementary, Adopted 2014.

(a) According to the National Standards for Foreign Language Learning, advanced level language proficiency is necessary for college and career readiness. To that end, students should have uninterrupted, consistent access to early standards-based learning experiences in languages other than English. School districts are strongly encouraged to offer languages other than English in the elementary grades in immersion or Foreign Language in Elementary Schools (FLES) settings with consistent and frequent exposure. For districts that offer languages in elementary school, the expected student outcomes are the same as those designated at levels I-IV in Subchapter C of this chapter (relating to Texas Essential Knowledge and Skills for Languages Other Than English).

(b) Districts may offer a level of a language in a variety of scheduling arrangements that may extend or reduce the traditional schedule when careful consideration is given to the instructional time available on a campus and the language ability, access to programs, and motivation of students.


(a) Introduction.

(1) The goal of health education is to provide instruction that allows youth to develop and sustain health-promoting behaviors throughout their lives. The understanding and application of these standards will allow students the ability to gather, interpret, and understand health information; achieve health literacy; and adapt to the ever-evolving science of health. The health education knowledge and skills should be presented to students in a positive manner to support the development of a healthy self-concept and responsible decision making. The standards will help students reinforce, foster, and apply positive character traits.

(2) There are essential skills that repeat throughout the five strands and embody the interconnection of health literacy. These skills include decision making, problem solving, goal setting, maintaining healthy relationships with self and others, seeking help and support, and recognizing various influences on health such as social, environmental, media, and genetic. These skills, developed early on and reinforced throughout a student's education, will foster mastery of health concepts. Health class educators are encouraged to partner with school counselors where available to schedule time for them to deliver classroom guidance lessons to help teach these essential competencies.

(3) In Kindergarten-Grade 3, students gain an understanding of health information and skills through five strands: physical health and hygiene; mental health and wellness; healthy eating and physical activity; injury and violence prevention and safety; and alcohol, tobacco, and other drugs.

(A) Physical health and hygiene education helps to prepare students for improved lifelong health outcomes. Learning about body systems lays the foundation for personal health and hygiene. Health literacy and preventative behaviors empower students to make informed choices to support self, family, and community.

(B) The mental health and wellness strand recognizes that the knowledge and skills necessary to manage emotions, reactions, and relationships are essential to reaching one's full potential. Students gain knowledge about social and emotional health, including developing a healthy self-concept, understanding risk and protective factors, and identifying and managing mental health and wellness concerns. In the early grades, students develop fluency around emotions and self-regulation and understand the relationship between feelings, thoughts, and
behavior. In subsequent grades, students learn and practice appropriate ways to solve interpersonal conflicts, work to develop a positive self-image, and develop healthy self-management skills.

(C) The healthy eating and physical activity strand addresses the importance of nutrition and physical activity to support a healthy lifestyle. Students apply critical-thinking and decision-making skills to make positive health choices. Students learn about essential nutrients, food groups, portion control, government nutritional recommendations, and the health benefits of being physically active. Students evaluate the connection between physical activity and nutrition and the prevention of chronic diseases.

(D) By focusing on injury and violence prevention and safety, the standards promote student well-being and awareness of dangerous situations. Supporting student well-being and providing instruction in digital citizenship, bullying prevention, first aid, and the identification of safe and unsafe situations creates empowered and educated students who are able to make decisions that keep themselves and others safe. Beginning in Kindergarten and continuing through high school, students gain knowledge and skills to support safety and wellness at school, at home, online, and in the community.

(E) The standards under the alcohol, tobacco, and other drugs strand focus on a number of protective factors that develop empowered students who are able to make better-informed decisions, including understanding the impact of substance use on physical, mental, and social health. Through this strand, students learn key concepts about alcohol, tobacco, and other drugs, including the use, misuse, and physiological effects; short- and long-term impacts on health; treatment; risk and protective factors; and prevention. These concepts introduce healthy alternatives and ways for students to ask for and seek out help from parents and other trusted adults.

(4) Statements containing the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(5) Students should first seek guidance in the area of health from a parent or legal guardian.

(b) Knowledge and skills.

(1) Physical health and hygiene--body systems. The student examines the structure, function, and relationships of body systems and their relevance to personal health. The student is expected to name, locate, and describe the primary functions and major components of body systems, including the skeletal, muscular, circulatory, and respiratory systems.

(2) Physical health and hygiene--personal health and hygiene. The student understands health literacy, preventative health behaviors, and how to access and evaluate health care information to make informed decisions. The student is expected to:

(A) explain the importance of seeking assistance in making decisions about health;
(B) describe methods of accessing information about health;
(C) identify the benefits of decision making about personal health;
(D) identify the importance of taking personal responsibility for developing and maintaining personal hygiene and health habits;
(E) explain ways in which germs are transmitted, methods of preventing the spread of germs, and the importance of immunization;
(F) identify that there are diseases such as allergies, asthma, diabetes, and epilepsy that are not caused by germs; and

(G) identify common vectors, including ticks and mosquitoes, and explain how and when to perform a self-check for vectors.

(3) Mental health and wellness--social and emotional health. The student identifies and applies strategies to develop socio-emotional health, self-regulation, and healthy relationships. The student is expected to:

(A) communicate needs, wants, and emotions in healthy ways;

(B) describe strategies for assessing thoughts and applying calming and self-management practices;

(C) discuss and explain how the brain develops through maturation;

(D) distinguish between healthy and harmful influences of friends and others;

(E) describe the characteristics of healthy and unhealthy friendships;

(F) describe the value of respectful communication;

(G) discuss how others may experience situations differently than oneself; and

(H) demonstrate strategies for resolving conflicts.

(4) Mental health and wellness--developing a healthy self-concept. The student develops the capacity for self-assessment and evaluation, goal setting, and decision making in order to develop a healthy self-concept. The student is expected to:

(A) define self-esteem and ways it is formed, including identifying areas for one's personal growth; and

(B) describe the importance of seeking guidance from a parent or another trusted adult in setting goals.

(5) Mental health and wellness--identifying and managing mental health and wellness concerns. The student will develop and use appropriate skills to identify and manage conditions related to mental health and wellness. The student is expected to:

(A) describe methods for managing challenges related to long-term health conditions;

(B) describe strategies to support others in managing different learning needs;

(C) describe positive outcomes of stress, including creativity, focus, energy, drive, and purpose;

(D) describe and practice healthy behaviors that reduce stress; and

(E) describe the importance of acceptance of oneself and others.

(6) Healthy eating and physical activity--food and beverage daily recommendations. The student identifies and explains healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to:

(A) classify foods by the nutrients they provide;

(B) plan a balanced meal that follows government nutrition guidelines;

(C) examine nutrition labels to identify the difference between foods containing natural sugars and foods with added sugars or sweeteners; and
(D) identify and categorize foods based on saturated and unsaturated fat content.

(7) Healthy eating and physical activity—nutrition and physical activity literacy. The student obtains, processes, and understands basic physical activity and nutrition information needed to make health-promoting decisions. The student is expected to describe the importance of accessing health information through a variety of credible health resources.

(8) Healthy eating and physical activity—risk and protective factors. The student identifies and explains risk and protective factors related to healthy eating and physical activity. The student is expected to:
   (A) identify the common food allergens listed on food packaging; and
   (B) describe how healthy and unhealthy behaviors affect body systems and demonstrate refusal skills in dealing with unhealthy eating situations.

(9) Injury and violence prevention and safety—safety skills and unintentional injury. The student identifies and demonstrates safety and first aid knowledge to prevent and treat injuries. The student is expected to develop a home-safety and emergency response plan such as a fire safety plan.

(10) Injury and violence prevention and safety—healthy relationships and conflict-resolution skills. The student differentiates between healthy and unhealthy relationships and demonstrates effective strategies to address conflict. The student is expected to identify refusal skills such as saying "no" when privacy, personal boundaries, or personal space are not respected.

(11) Injury and violence prevention and safety—healthy home, school, and community climate. The student understands that individual actions and awareness can impact safety, community, and environment. The student is expected to:
   (A) identify reasons for avoiding violence, gangs, weapons, and drugs;
   (B) identify characteristics of safe home, school, and community environments;
   (C) discuss the hazards of unsupervised and improper handling of guns and other weapons; and
   (D) create a personal safety plan.

(12) Injury and violence prevention and safety—digital citizenship and media. The student understands how to be a safe and responsible citizen in digital and online environments. The student is expected to:
   (A) identify and discuss the need for safety awareness in a digital or online environment;
   (B) identify appropriate ways to communicate in digital and online environments;
   (C) discuss who is appropriate to communicate with and what is appropriate information to share in digital and online environments; and
   (D) explain consequences that result from cyberbullying and inappropriate digital and online usage.

(13) Injury and violence prevention and safety—interpersonal violence. The student understands the impact of interpersonal violence and the importance of seeking guidance and help to maintain personal safety. The student is expected to:
(A) describe how to effectively respond to bullying and cyberbullying of oneself or others;
(B) explain the importance of seeking assistance in making decisions about personal safety; and
(C) define abuse and neglect.

(14) Alcohol, tobacco, and other drugs--use, misuse, and physiological effects. The student understands the difference between the use and misuse of different substances and how the use and misuse of substances impacts health. The student is expected to:
(A) identify misuse and proper use of over-the-counter and prescription drugs; and
(B) describe the harmful effects of alcohol, tobacco, other drugs, and dangerous substances, including inhalants, vaping products, and household products, on physical health.

(15) Alcohol, tobacco, and other drugs--short- and long-term impacts. The student identifies and analyzes the short- and long-term impacts of the use and misuse of alcohol; tobacco; drugs, including prescription drugs; and other substances. The student is expected to describe the harmful effects of alcohol, tobacco, other drugs, and dangerous substances such as inhalants and household products on mental and social health.

(16) Alcohol, tobacco, and other drugs--treatment. The student understands how to seek emergency help for self and others in poisoning and overdose situations. The student is expected to describe the signs of poisoning or overdose and identify how to respond, including who to contact for help.

(17) Alcohol, tobacco, and other drugs--risk and protective factors. The student understands how various factors can influence decisions regarding substance use and the resources available for help. The student is expected to:
(A) describe how friends can influence a person's decision to use or not use alcohol or drugs; and
(B) describe the difference between reporting and tattling and why it is important to report the use of alcohol, tobacco, and other drugs by friends or peers.

(18) Alcohol, tobacco, and other drugs--prevention. The student demonstrates refusal skills to avoid substance use and misuse. The student is expected to demonstrate refusal skills related to alcohol, tobacco, and other drugs using assertive communication.


(a) Introduction.

(1) Physical education is the foundation of a well-balanced curriculum. "It is an academic subject with a planned and sequential K-12 curriculum based on the national standards for physical education. Physical education provides cognitive content and instruction designed to develop motor skills, knowledge, and behaviors for physical activity and physical fitness. Supporting schools to establish daily physical education can provide students with the ability and confidence to be physically active for a lifetime" (Centers for Disease Control and Prevention (CDC), CDC Healthy Schools, May 2019).

(A) Physical education is designed to develop motor skills, knowledge, and behaviors for active living, physical fitness, sportsmanship, self-efficacy, and emotional
intelligence. Physical education addresses the three domains of learning: cognitive skills related to the knowledge of movement, affective skills related to feelings and attitudes about movement, and psychomotor skills related to the manual or physical skills in movement literacy (SHAPE America, 2014, p. 4).

(B) Physically literate students have the ability to develop a lifetime of wellness. Physical literacy can be described as the ability to move with competence and confidence, to acquire knowledge and understanding, and to value and take responsibility for engagement in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person (Mandigo, Francis, Lodewyk & Lopez, 2012, and Whitehead, 2016).

(C) Research shows physical education is important to the development of the whole child and increases a lifetime of wellness. The Association for Supervision and Curriculum Development and the National Academy of Medicine support the belief that physical education, taught at a developmentally appropriate level, improves physical fitness and skill development, supports and improves academic achievement, reinforces self-discipline and teacher goal setting, reduces stress and increases blood flow to the brain, strengthens peer relationships, and improves self-confidence and self-esteem.

(2) The physical education standards are categorized into five strands that are of equal importance and value. The movement patterns and movement skills strand guides the physically literate student in the development of fundamental movement patterns, spatial and body awareness, and rhythmic activities. The performance strategies strand guides the physically literate student in utilizing strategies in fundamental components of games, activities, and outdoor and recreational pursuits. The health, physical activity, and fitness strand encompasses health-related fitness, environmental awareness, and safety practices that guide students to a health-enhancing, physically active lifestyle. The physically literate student demonstrates skills and mechanics used during physical activity and analyzes data used during fitness performance. The physically literate student recognizes the correlation between nutrition, hydration, and physical activity. The social and emotional health strand incorporates working with others, responding to class expectations, and applying self-management skills. The lifetime wellness strand engages students in physical activity for the purposes of self-expression, enjoyment, and challenge.

(3) Quality physical education programs include a comprehensive curriculum, physical activity, safety policies, safe environments, qualified physical education specialists instructing the class, and student assessment and do not use physical activity as a form of punishment. Texas state law outlines state requirements that support these essential components. In accordance with state law, physical education curriculum and instruction must be sequential, developmentally appropriate, and designed to meet the needs of all students, including students with disabilities and of all physical ability levels. At least 50% of the physical education class must be used for actual student physical activity at a moderate or vigorous intensity level, which aligns with additional state requirements for a minimum number of minutes for moderate or vigorous physical activity in Kindergarten-Grade 8. Required student-to-teacher ratios of 45-to-1 ensure the proper supervision and safety of students in physical education classes, and school districts must identify how student safety will be maintained if that ratio is exceeded. State law also requires that school districts and charter schools annually assess the physical fitness of students in Grade 3 or higher who are enrolled in a physical education course.
(4) Access to age-appropriate physical education equipment is essential to quality instruction. Basic, age-appropriate equipment for all students is imperative for the development of motor skills, manipulative skills, and eventually becoming a physically literate lifelong learner. Without basic, age-appropriate equipment, students will not have the necessary experiences to become physically literate, lifelong learners. All equipment should be age appropriate for the grade levels to be taught. The term "age appropriate" means that the equipment must include a variety of sizes, weights, and textures to provide differentiated experiences for various ages and ability levels of students. Basic equipment for quality instruction includes, but is not limited to, the following list: sports balls, including fleece balls, foam balls, tennis balls, beach balls, volleyballs, basketballs, soccer balls, footballs, baseballs, softballs, and unity balls; striking implements, including golf clubs, hockey sticks, baseball bats, pool noodles, tennis rackets, racquetball rackets, pickleball paddles, lollipop paddles, and ping pong paddles; goals for various sports, including soccer goals and basketball goals; nets and standards for a variety of sports, including volleyball, pickleball, badminton, and tennis; fitness-related equipment; other basic equipment, including scarves, bean bags, hula hoops, jump ropes, and scooters; classroom management equipment, including cones, mats, pinnies, poly spots, and ball inflators; and technology, including microphones, projectors, speakers, heart rate monitors, timers, and other technology appropriate for instruction.

(5) In Kindergarten-Grade 5, students learn fundamental movement skills and cues; begin to understand that the body functions in relation to physical activity; develop body control; become aware of the health-related fitness components; begin applying strategies, rules, etiquette, and conflict resolution techniques in dynamic situations; and identify safety practices and protocols while being physically active. Students engage in activities that develop basic levels of strength, endurance, and flexibility. Activities are presented to complement a student's natural inclination to view physical activity as challenging and enjoyable.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(b) Knowledge and skills.

(1) Movement patterns and movement skills—locomotor skills. The physically literate student demonstrates competency in fundamental movement patterns and developmentally appropriate locomotor skills. The student is expected to:

(A) demonstrate correct technique while hopping, galloping, running, sliding, skipping, and leaping;

(B) demonstrate correct jumping and landing technique from different heights;

(C) demonstrate intermediate balancing to include equipment, cross lateralization using a variety of coordination skills, and sequencing of three skills with repetition; and

(D) spin and roll with control at different levels, speeds, and positions with manipulatives.

(2) Movement patterns and movement skills—non-locomotor skills. The physically literate student demonstrates competency in fundamental movement patterns and developmentally appropriate non-locomotor skills. The student is expected to:

(A) demonstrate moving in and out of a balanced position with control during dynamic activities; and
combine bending, stretching, twisting, curling, pushing, pulling, and swaying in a variety of activities.

Movement patterns and movement skills—manipulative skills. The physically literate student demonstrates competency in developmentally appropriate manipulative skills. The student is expected to:

(A) demonstrate key elements in underhand and overhand throwing to a partner with accuracy;

(B) demonstrate key elements when catching an accurately and softly thrown large ball with a partner without trapping against the body;

(C) demonstrate key elements of hand dribbling while slowly jogging and maintaining ball control;

(D) dribble a ball with control using both feet while slowly jogging;

(E) kick a moving ball on the ground and in the air using a continuous running approach;

(F) demonstrate correct technique in volleying to a wall or partner and over an object or net;

(G) demonstrate correct technique when striking a moving object over a low net or to a wall with a hand or short- or long-handled implement;

(H) jump a self-turned rope using a variety of basic skills; and

(I) enter and exit a turned long rope using basic jumping skills.

Movement patterns and movement skills—spatial and body awareness. The physically literate student demonstrates competency in spatial and body awareness, including pathways, shapes, levels, speed, direction, and force. The student is expected to:

(A) demonstrate locomotor, non-locomotor, and manipulative skills safely in personal and open space;

(B) combine pathways and levels into various movement patterns in a wide variety of physical activities; and

(C) combine speed, direction, and force as directed by teacher.

Movement patterns and movement skills—rhythmic activities. The physically literate student demonstrates competency in rhythmic activities and rhythmic combinations. The student is expected to demonstrate various rhythmic combinations of locomotor skills of eight counts in repeatable patterns when leading or following a partner.

Performance strategies—games and activities. The physically literate student demonstrates competency in performance strategies in invasion, target, net or wall, fielding, striking, and cooperative games. The student is expected to:

(A) combine the skills of chasing, fleeing, and dodging to avoid or catch others during a variety of games;

(B) demonstrate specific movement skills to improve performance in designated dynamic activities; and

(C) explain and follow rules, procedures, and safe practices during games and activities.
Performance strategies--outdoor and recreational pursuits. The physically literate student demonstrates competency in outdoor and recreational pursuits. The student is expected to participate in introductory outdoor recreational skills and activities such as rock climbing, hiking, paddle sports, disc golf, or challenge courses.

Health, physical activity, and fitness—fitness principles. The physically literate student demonstrates and recognizes a health-enhancing, physically active lifestyle. The student is expected to:

(A) describe the benefits of regular physical activity, including stress management;
(B) identify the importance of frequency and intensity during endurance activities; and
(C) explain and demonstrate the correct techniques of health-related fitness components.

Health, physical activity, and fitness—analyze data. The physically literate student demonstrates competency in the ability to analyze data used during fitness performance. The student is expected to:

(A) describe the importance of setting personal fitness goals in improving health-related fitness; and
(B) identify how to measure improvement and track progress for health-related fitness.

Health, physical activity, and fitness—nutrition and hydration. The physically literate student recognizes the correlation between nutrition, hydration, and physical activity. The student is expected to:

(A) differentiate between healthy and unhealthy foods and their impact on sustainable energy for physical activity; and
(B) differentiate between water and processed sugar or high-calorie drinks and their impact on sustainable energy for physical activity.

Health, physical activity, and fitness—environmental awareness and safety practices. The physically literate student demonstrates competency in environmental awareness and understands safety practices. The student is expected to:

(A) select proper attire and safety equipment that promote safe participation and prevent injury in a variety of physical activities; and
(B) exhibit correct safety precautions, including pedestrian, water, sun, cycling, skating, and scooter safety.

Social and emotional health—personal responsibility and self-management. The physically literate student demonstrates competency in personal responsibility. The student is expected to:

(A) explain that personal actions have consequences for self and others;
(B) demonstrate respect for differences and similarities in abilities of self and others; and
(C) explain and demonstrate self-management skills to control personal impulses and emotions.
Social and emotional health--resolving conflict and social interaction. The physically literate student demonstrates competency in resolving conflict and social interaction. The student is expected to:

(A) demonstrate respect and cooperation through words and actions during various group activities; and

(B) identify the feelings of others.

Social and emotional health--perseverance. The physically literate student perseveres while addressing challenges. The student is expected to explain how practicing challenging physical activities can build confidence and minimize frustration when learning a variety of new skills.

Social and emotional health--accepting and providing constructive feedback. The physically literate student accepts and provides constructive feedback. The student is expected to listen respectfully to make appropriate changes in performance based on feedback.

Lifetime wellness--application of lifetime wellness. The physically literate student identifies the value of lifetime wellness. The student is expected to:

(A) differentiate among types of and participate in moderate to vigorous physical activity for a sustained period of time on a regular basis using technology when available; and

(B) select and participate in physical activity for personal enjoyment.

§117.111. Art, Grade 3, Adopted 2013.

(a) Introduction.

(1) The fine arts incorporate the study of dance, music, theatre, and the visual arts to offer unique experiences and empower students to explore realities, relationships, and ideas. These disciplines engage and motivate all students through active learning, critical thinking, and innovative problem solving. The fine arts develop cognitive functioning and increase student academic achievement, higher-order thinking, communication, and collaboration skills, making the fine arts applicable to college readiness, career opportunities, workplace environments, social skills, and everyday life. Students develop aesthetic and cultural awareness through exploration, leading to creative expression. Creativity, encouraged through the study of the fine arts, is essential to nurture and develop the whole child.

(2) Four basic strands--foundations: observation and perception; creative expression; historical and cultural relevance; and critical evaluation and response--provide broad, unifying structures for organizing the knowledge and skills students are expected to acquire. Each strand is of equal value and may be presented in any order throughout the year. Students rely on personal observations and perceptions, which are developed through increasing visual literacy and sensitivity to surroundings, communities, memories, imaginings, and life experiences, as sources for thinking about, planning, and creating original artworks. Students communicate their thoughts and ideas with innovation and creativity. Through art, students challenge their imaginations, foster critical thinking, collaborate with others, and build reflective skills. While exercising meaningful problem-solving skills, students develop the lifelong ability to make informed judgments.

(3) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.
(b) Knowledge and skills.

(1) Foundations: observation and perception. The student develops and expands visual literacy skills using critical thinking, imagination, and the senses to observe and explore the world by learning about, understanding, and applying the elements of art, principles of design, and expressive qualities. The student uses what the student sees, knows, and has experienced as sources for examining, understanding, and creating artworks. The student is expected to:

(A) explore ideas from life experiences about self, peers, family, school, or community and from the imagination as sources for original works of art;

(B) use appropriate vocabulary when discussing the elements of art, including line, shape, color, texture, form, space, and value, and the principles of design, including emphasis, repetition/pattern, movement/rhythm, contrast/variety, balance, proportion, and unity; and

(C) discuss the elements of art as building blocks and the principles of design as organizers of works of art.

(2) Creative expression. The student communicates ideas through original artworks using a variety of media with appropriate skills. The student expresses thoughts and ideas creatively while challenging the imagination, fostering reflective thinking, and developing disciplined effort and progressive problem solving skills. The student is expected to:

(A) integrate ideas drawn from life experiences to create original works of art;

(B) create compositions using the elements of art and principles of design; and

(C) produce drawings; paintings; prints; sculpture, including modeled forms; and other art forms such as ceramics, fiber art, constructions, mixed media, installation art, digital art and media, and photographic imagery using a variety of materials.

(3) Historical and cultural relevance. The student demonstrates an understanding of art history and culture by analyzing artistic styles, historical periods, and a variety of cultures. The student develops global awareness and respect for the traditions and contributions of diverse cultures. The student is expected to:

(A) identify simple main ideas expressed in artworks from various times and places;

(B) compare and contrast artworks created by historical and contemporary men and women, making connections to various cultures;

(C) connect art to career opportunities for positions such as architects, animators, cartoonists, engineers, fashion designers, film makers, graphic artists, illustrators, interior designers, photographers, and web designers; and

(D) investigate the connections of visual art concepts to other disciplines.

(4) Critical evaluation and response. The student responds to and analyzes artworks of self and others, contributing to the development of lifelong skills of making informed judgments and reasoned evaluations. The student is expected to:

(A) evaluate the elements of art, principles of design, or expressive qualities in artworks of self, peers, and historical and contemporary artists;

(B) use methods such as oral response or artist statements to identify main ideas found in collections of artworks created by self, peers, and major historical or contemporary artists in real or virtual portfolios, galleries, or art museums; and

(C) compile collections of personal artworks such as physical artworks, electronic images, sketchbooks, or portfolios for purposes of self assessment or exhibition.

(a) Introduction.

(1) The fine arts incorporate the study of dance, music, theatre, and the visual arts to offer unique experiences and empower students to explore realities, relationships, and ideas. These disciplines engage and motivate all students through active learning, critical thinking, and innovative problem solving. The fine arts develop cognitive functioning and increase student academic achievement, higher-order thinking, communication, and collaboration skills, making the fine arts applicable to college readiness, career opportunities, workplace environments, social skills, and everyday life. Students develop aesthetic and cultural awareness through exploration, leading to creative expression. Creativity, encouraged through the study of the fine arts, is essential to nurture and develop the whole child.

(2) Four basic strands--foundations: music literacy; creative expression; historical and cultural relevance; and critical evaluation and response--provide broad, unifying structures for organizing the knowledge and skills students are expected to acquire. The foundation of music literacy is fostered through reading, writing, reproducing, and creating music, thus developing a student's intellect. Through creative expression, students apply their music literacy and the critical-thinking skills of music to sing, play, read, write, and/or move. By experiencing musical periods and styles, students will understand the relevance of music to history, culture, and the world, including the relationship of music to other academic disciplines and the vocational possibilities offered. Through critical listening, students analyze, evaluate, and respond to music, developing criteria for making critical judgments and informed choices.

(3) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(b) Knowledge and skills.

(1) Foundations: music literacy. The student describes and analyzes musical sound. The student is expected to:

   (A) categorize and explain a variety of musical sounds, including those of children and adult voices;

   (B) categorize and explain a variety of musical sounds, including those of woodwind, brass, string, percussion, and instruments from various cultures;

   (C) use known music symbols and terminology referring to rhythm; melody; timbre; form; tempo; and dynamics, including mezzo piano and mezzo forte, to identify musical sounds presented aurally; and

   (D) identify and label small and large musical forms such as abac, AB, and ABA presented aurally in simple songs and larger works.

(2) Foundations: music literacy. The student reads, writes, and reproduces music notation using a system. Technology and other tools may be used to read, write, and reproduce musical examples. The student is expected to:

   (A) read, write, and reproduce rhythmic patterns using standard notation, including four sixteenth notes, whole notes, whole rests, and previously learned note values in 2/4 and 4/4 meters as appropriate;

   (B) read, write, and reproduce extended pentatonic melodic patterns using standard staff notation; and
(C) identify new and previously learned music symbols and terms referring to tempo and dynamics, including mezzo piano and mezzo forte.

(3) Creative expression. The student performs a varied repertoire of developmentally appropriate music in informal or formal settings. The student is expected to:

(A) sing or play classroom instruments with accurate intonation and rhythm independently or in groups;

(B) sing or play a varied repertoire of music such as American folk songs and folk songs representative of local cultures independently or in groups;

(C) move alone or with others to a varied repertoire of music using gross motor, fine motor, locomotor, and non-locomotor skills and integrated movement such as hands and feet moving together;

(D) perform simple part work, including rhythmic and melodic ostinati, derived from known repertoire; and

(E) interpret through performance new and previously learned music symbols and terms referring to tempo and dynamics, including mezzo piano and mezzo forte.

(4) Creative expression. The student creates and explores new musical ideas within specified guidelines. The student is expected to:

(A) create rhythmic phrases through improvisation or composition;

(B) create melodic phrases through improvisation or composition; and

(C) create simple accompaniments through improvisation or composition.

(5) Historical and cultural relevance. The student examines music in relation to history and cultures. The student is expected to:

(A) perform a varied repertoire of songs, movement, and musical games representative of American and local cultures;

(B) identify music from diverse genres, styles, periods, and cultures; and

(C) identify the relationships between music and interdisciplinary concepts.

(6) Critical evaluation and response. The student listens to, responds to, and evaluates music and musical performances. The student is expected to:

(A) exhibit audience etiquette during live and recorded performances;

(B) recognize known rhythmic and melodic elements in aural examples using appropriate vocabulary;

(C) identify specific musical events in aural examples such as changes in timbre, form, tempo, or dynamics using appropriate vocabulary;

(D) respond verbally and through movement to short musical examples; and

(E) describe a variety of compositions and formal or informal musical performances using specific music vocabulary.

§117.113. Theatre, Grade 3, Adopted 2013.

(a) Introduction.
(1) The fine arts incorporate the study of dance, music, theatre, and the visual arts to offer unique experiences and empower students to explore realities, relationships, and ideas. These disciplines engage and motivate all students through active learning, critical thinking, and innovative problem solving. The fine arts develop cognitive functioning and increase student academic achievement, higher-order thinking, communication, and collaboration skills, making the fine arts applicable to college readiness, career opportunities, workplace environments, social skills, and everyday life. Students develop aesthetic and cultural awareness through exploration, leading to creative expression. Creativity, encouraged through the study of the fine arts, is essential to nurture and develop the whole child.

(2) Four basic strands—foundations: inquiry and understanding; creative expression; historical and cultural relevance; and critical evaluation and response—provide broad, unifying structures for organizing knowledge and skills students are expected to acquire. Through the foundations: inquiry and understanding strand, students develop a perception of self, human relationships, and the world using elements of drama and conventions of theatre. Through the creative expression strand, students communicate in a dramatic form, engage in artistic thinking, build positive self-concepts, relate interpersonally, and integrate knowledge with other content areas in a relevant manner. Through the historical and cultural relevance strand, students increase their understanding of heritage and traditions in theatre and the diversity of world cultures as expressed in theatre. Through the critical evaluation and response strand, students engage in inquiry and dialogue, accept constructive criticism, revise personal views to promote creative and critical thinking, and develop the ability to appreciate and evaluate live theatre.

(3) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(b) Knowledge and skills.

(1) Foundations: inquiry and understanding. 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) react to sensory and emotional experiences such as sight or sound and happiness or sadness through creative play;
   (B) create playing space using expressive and rhythmic movement;
   (C) respond to sounds, music, images, language, and literature using movement; and
   (D) reflect the environment, portray character, and demonstrate actions in classroom dramatizations.

(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 movement and voice;
   (B) participate in a variety of roles in real life or imaginative situations through narrative pantomime, dramatic play, or story dramatization;
   (C) dramatize literary selections using shadow play or puppetry; and
   (D) dramatize literary selections using pantomime and imitative dialogue.

(3) Creative expression: production. The student applies design, directing, and theatre production concepts and skills. The student is expected to:
   (A) identify technical theatre elements such as props, costumes, sound, and visual elements that define character, environment, action, and theme;
(B) use simple technical theatre elements such as props, costumes, sound, and visual elements that define character, environment, action, and theme;

(C) plan dramatic play;

(D) cooperate and interact with others in dramatic play; and

(E) observe live or multimedia theatrical performances.

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

(A) explore historical and diverse cultural influences from a variety of sources through dramatic activities;

(B) illustrate similarities and differences between life and theatre, television, and film through dramatic play; and

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

(A) apply appropriate audience behavior consistently;

(B) discuss and evaluate simple dramatic activities and performances; and

(C) discuss the use of music, movement, and visual components in dramatic activities and performances.

§126.7. Technology Applications, Grades 3-5, Beginning with School Year 2012-2013.

(a) Introduction.

(1) The technology applications curriculum has six strands based on the National Educational Technology Standards for Students (NETS•S) and performance indicators developed by the International Society for Technology in Education (ISTE): creativity and innovation; communication and collaboration; research and information fluency; critical thinking, problem solving, and decision making; digital citizenship; and technology operations and concepts.

(2) Through the study of the six strands in technology applications, students use creative thinking and innovative processes to construct knowledge and develop products. Students communicate and collaborate both locally and globally to reinforce and promote learning. Research and information fluency includes the acquisition and evaluation of digital content. Students develop critical-thinking, problem-solving, and decision-making skills by collecting, analyzing, and reporting digital information. Students practice digital citizenship by behaving responsibly while using technology tools and resources. Through the study of technology operations and concepts, students learn technology related terms, concepts, and data input strategies.

(3) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(b) Knowledge and skills.

(1) Creativity and innovation. The student uses creative thinking and innovative processes to construct knowledge and develop digital products. The student is expected to:

(A) create original products using a variety of resources;

(B) analyze trends and forecast possibilities, developing steps for the creation of an innovative process or product; and
(C) use virtual environments to explore systems and issues.

(2) Communication and collaboration. The student collaborates and communicates both locally and globally using digital tools and resources to reinforce and promote learning. The student is expected to:
(A) draft, edit, and publish products in different media individually and collaboratively;
(B) use font attributes, color, white space, and graphics to ensure that products are appropriate for multiple communication media, including monitor display, web, and print;
(C) collaborate effectively through personal learning communities and social environments;
(D) select and use appropriate collaboration tools;
(E) evaluate the product for relevance to the assignment or task; and
(F) perform basic software application functions, including opening applications and creating, modifying, printing, and saving files.

(3) Research and information fluency. The student acquires and evaluates digital content. The student is expected to:
(A) use various search strategies such as keyword(s); the Boolean identifiers and, or, and not; and other strategies appropriate to specific search engines;
(B) collect and organize information from a variety of formats, including text, audio, video, and graphics;
(C) validate and evaluate the relevance and appropriateness of information; and
(D) acquire information appropriate to specific tasks.

(4) Critical thinking, problem solving, and decision making. The student researches and evaluates projects using digital tools and resources. The student is expected to:
(A) identify information regarding a problem and explain the steps toward the solution;
(B) collect, analyze, and represent data to solve problems using tools such as word processing, databases, spreadsheets, graphic organizers, charts, multimedia, simulations, models, and programming languages;
(C) evaluate student-created products through self and peer review for relevance to the assignment or task; and
(D) evaluate technology tools applicable for solving problems.

(5) Digital citizenship. The student practices safe, responsible, legal, and ethical behavior while using digital tools and resources. The student is expected to:
(A) adhere to acceptable use policies reflecting positive social behavior in the digital environment;
(B) respect the intellectual property of others;
(C) abide by copyright law and the Fair Use Guidelines for Educational Multimedia;
(D) protect and honor the individual privacy of oneself and others;
(E) follow the rules of digital etiquette;
(F) practice safe, legal, and responsible use of information and technology; and
(G) comply with fair use guidelines and digital safety rules.

(6) Technology operations and concepts. The student demonstrates knowledge and appropriate use of technology systems, concepts, and operations. The student is expected to:

(A) demonstrate an understanding of technology concepts, including terminology for the use of operating systems, network systems, virtual systems, and learning systems appropriate for Grades 3-5 learning;

(B) manipulate files using appropriate naming conventions; file management, including folder structures and tagging; and file conversions;

(C) navigate systems and applications accessing peripherals both locally and remotely;

(D) troubleshoot minor technical problems with hardware and software using available resources such as online help and knowledge bases; and

(E) use proper touch keyboarding techniques and ergonomic strategies such as correct hand and body positions and smooth and rhythmic keystrokes.