



Plant A Seed TEKS

Kindergarten

TEKS for Science, Physical Fitness, Mathematics and English Language Arts and Reading

§112.11. Science, Kindergarten.

(b) Knowledge and skills.

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

(A) identify and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately;

(B) discuss the importance of safe practices to keep self and others safe and healthy; and

(C) demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reusing or recycling paper, plastic, and metal.

(2) Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:

(A) ask questions about organisms, objects, and events observed in the natural world;

(B) plan and conduct simple descriptive investigations such as ways objects move;

(C) collect data and make observations using simple equipment such as hand lenses, primary balances, and non-standard measurement tools;

(D) record and organize data and observations using pictures, numbers, and words; and

(E) communicate observations with others about simple descriptive investigations.

(3) Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:

(A) identify and explain a problem such as the impact of littering on the playground and propose a solution in his/her own words;

(B) make predictions based on observable patterns in nature such as the shapes of leaves; and

(C) explore that scientists investigate different things in the natural world and use tools to help in their investigations.

(4) Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:

(A) collect information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, and notebooks; timing devices, including clocks and timers; non-standard measuring items such as paper clips and clothespins; weather instruments such as demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as terrariums and aquariums; and

(B) use senses as a tool of observation to identify properties and patterns of organisms, objects, and events in the environment.

(5) Matter and energy. The student knows that objects have properties and patterns. The student is expected to:

(A) observe and record properties of objects, including relative size and mass, such as bigger or smaller and heavier or lighter, shape, color, and texture; and

(B) observe, record, and discuss how materials can be changed by heating or cooling.

(6) Force, motion, and energy. The student knows that energy, force, and motion are related and are a part of their everyday life. The student is expected to:

(A) use the five senses to explore different forms of energy such as light, heat, and sound;

(C) observe and describe the location of an object in relation to another such as above, below, behind, in front of, and beside; and

(D) observe and describe the ways that objects can move such as in a straight line, zigzag, up and down, back and forth, round and round, and fast and slow.

(7) Earth and space. The student knows that the natural world includes earth materials. The student is expected to:

(A) observe, describe, compare, and sort rocks by size, shape, color, and texture;

(B) observe and describe physical properties of natural sources of water, including color and clarity; and

(C) give examples of ways rocks, soil, and water are useful.

(8) Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:

(A) observe and describe weather changes from day to day and over seasons;

(B) identify events that have repeating patterns, including seasons of the year and day and night; and

(C) observe, describe, and illustrate objects in the sky such as the clouds, Moon, and stars, including the Sun.

(9) Organisms and environments. The student knows that plants and animals have basic needs and depend on the living and nonliving things around them for survival. The student is expected to:

- (A) differentiate between living and nonliving things based upon whether they have basic needs and produce offspring; and
- (B) examine evidence that living organisms have basic needs such as food, water, and shelter for animals and air, water, nutrients, sunlight, and space for plants.

(10) Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:

- (A) sort plants and animals into groups based on physical characteristics such as color, size, body covering, or leaf shape;
- (B) identify parts of plants such as roots, stem, and leaves and parts of animals such as head, eyes, and limbs;
- (C) identify ways that young plants resemble the parent plant; and
- (D) observe changes that are part of a simple life cycle of a plant: seed, seedling, plant, flower, and fruit.

§116.2. Physical Education, Kindergarten.

(b) Knowledge and skills.

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

- (A) travel in different ways in a large group without bumping into others or falling;
- (B) demonstrate clear contrasts between slow and fast movement when traveling;
- (C) demonstrate non-locomotor (axial) movements such as bend and stretch;
- (D) maintain balance while bearing weight on a variety of body parts;
- (E) walk forward and sideways the length of a beam without falling;
- (F) demonstrate a variety of relationships such as under, over, behind, next to, through, right, left, up, down, forward, backward, and in front of;

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

- (B) demonstrate movement forms of various body parts such as head flexion, extension, and rotation.

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

- (A) describe and select physical activities that provide opportunities for enjoyment and challenge;
- (B) participate in moderate to vigorous physical activities on a daily basis that cause increased heart rate, breathing rate, and perspiration;
- (C) participate in appropriate exercises for flexibility in shoulders, legs, and trunk;
- (E) describe the benefits from involvement in daily physical activity such as feel better and sleep better.

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

- (A) observe and describe the immediate effect of physical activity on the heart and breathing rate and perspiration;

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

- (A) respond appropriately to starting and stopping signals; and
- (B) demonstrate the ability to play within boundaries during games and activities.

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

- (A) follow rules, procedures, and safe practices;
- (B) work in a group setting in cooperation with others; and
- (C) share space and equipment with others.

Source: The provisions of this §116.2 adopted to be effective September 1, 1998, 22 TexReg 7759.

§111.12. Mathematics, Kindergarten.

(b) Knowledge and skills.

(1) Number, operation, and quantitative reasoning. The student uses numbers to name quantities. The student is expected to:

- (A) use one-to-one correspondence and language such as more than, same number as, or two less than to describe relative sizes of sets of concrete objects;

(B) use sets of concrete objects to represent quantities given in verbal or written form (through 20); and

(C) use numbers to describe how many objects are in a set (through 20) using verbal and symbolic descriptions.

(2) Number, operation, and quantitative reasoning. The student describes order of events or objects. The student is expected to:

(A) use language such as before or after to describe relative position in a sequence of events or objects; and

(B) name the ordinal positions in a sequence such as first, second, third, etc.

(3) Number, operation, and quantitative reasoning. The student recognizes that there are quantities less than a whole. The student is expected to:

(A) share a whole by separating it into two equal parts; and

(B) explain why a given part is half of the whole.

(7) Geometry and spatial reasoning. The student describes the relative positions of objects. The student is expected to:

(A) describe one object in relation to another using informal language such as over, under, above, and below; and

(B) place an object in a specified position.

(8) Geometry and spatial reasoning. The student uses attributes to determine how objects are alike and different. The student is expected to:

(A) describe and identify an object by its attributes using informal language;

(10) Measurement. The student directly compares the attributes of length, area, weight/mass, capacity, and/or relative temperature. The student uses comparative language to solve problems and answer questions. The student is expected to:

(A) compare and order two or three concrete objects according to length (longer/shorter than, or the same);

(C) compare two containers according to capacity (holds more, holds less, or holds the same);

(D) compare two objects according to weight/mass (heavier than, lighter than or equal to); and

(14) Underlying processes and mathematical tools. The student communicates about Kindergarten mathematics using informal language. The student is expected to:

(A) communicate mathematical ideas using objects, words, pictures, numbers, and technology; and

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

(15) Underlying processes and mathematical tools. The student uses logical reasoning. The student is expected to justify his or her thinking using objects, words, pictures, numbers, and technology.

Source: The provisions of this §111.12 adopted to be effective September 1, 1998, 22 TexReg 7623; amended to be effective August 1, 2006, 30 TexReg 7471.

110.11. English Language Arts and Reading, Kindergarten,

(b) Knowledge and skills.

(1) Reading/Beginning Reading Skills/Print Awareness. Students understand how English is written and printed. Students are expected to:

(C) demonstrate the one-to-one correspondence between a spoken word and a printed word in text;

(F) hold a book right side up, turn its pages correctly, and know that reading moves from top to bottom and left to right; and

(G) identify different parts of a book (e.g., front and back covers, title page).

(4) Reading/Beginning Reading/Strategies. Students comprehend a variety of texts drawing on useful strategies as needed. Students are expected to:

(A) predict what might happen next in text based on the cover, title, and illustrations; and

(B) ask and respond to questions about texts read aloud.

(21) Listening and Speaking/Listening. Students use comprehension skills to listen attentively to others in formal and informal settings. Students continue to apply earlier standards with greater complexity. Students are expected to:

(A) listen attentively by facing speakers and asking questions to clarify information; and

(B) follow oral directions that involve a short related sequence of actions.

(22) Listening and Speaking/Speaking. Students speak clearly and to the point, using the conventions of language. Students continue to apply earlier standards with greater complexity. Students are expected to share information and ideas by speaking audibly and clearly using the conventions of language.

(23) Listening and Speaking/Teamwork. Students work productively with others in teams. Students continue to apply earlier standards with greater complexity. Students are expected to follow agreed-upon rules for discussion, including taking turns and speaking one at a time.

Source: The provisions of this §110.11 adopted to be effective September 4, 2008, 33 TexReg 7162.

Grade 1

TEKS for Science, Physical Fitness, Mathematics and English Language Arts and Reading

§112.12. Science, Grade 1,

(b) Knowledge and skills.

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

- (A) recognize and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately;
- (B) recognize the importance of safe practices to keep self and others safe and healthy; and
- (C) identify and learn how to use natural resources and materials, including conservation and reuse or recycling of paper, plastic, and metals.

(2) Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:

- (A) ask questions about organisms, objects, and events observed in the natural world;
- (B) plan and conduct simple descriptive investigations such as ways objects move;
- (C) collect data and make observations using simple equipment such as hand lenses, primary balances, and non-standard measurement tools;
- (D) record and organize data using pictures, numbers, and words; and
- (E) communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations.

(3) Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:

- (A) identify and explain a problem such as finding a home for a classroom pet and propose a solution in his/her own words;
- (B) make predictions based on observable patterns; and
- (C) describe what scientists do.

(4) Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:

(A) collect, record, and compare information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, notebooks, and safety goggles; timing devices, including clocks and timers; non-standard measuring items such as paper clips and clothespins; weather instruments such as classroom demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as terrariums; and

(B) measure and compare organisms and objects using non-standard units.

(5) Matter and energy. The student knows that objects have properties and patterns. The student is expected to:

(A) classify objects by observable properties of the materials from which they are made such as larger and smaller, heavier and lighter, shape, color, and texture; and

(B) predict and identify changes in materials caused by heating and cooling such as ice melting, water freezing, and water evaporating.

(6) Force, motion, and energy. The student knows that force, motion, and energy are related and are a part of everyday life. The student is expected to:

(A) identify and discuss how different forms of energy such as light, heat, and sound are important to everyday life;

(C) describe the change in the location of an object such as closer to, nearer to, and farther from; and

(D) demonstrate and record the ways that objects can move such as in a straight line, zig zag, up and down, back and forth, round and round, and fast and slow.

(7) Earth and space. The student knows that the natural world includes rocks, soil, and water that can be observed in cycles, patterns, and systems. The student is expected to:

(A) observe, compare, describe, and sort components of soil by size, texture, and color;

(B) identify and describe a variety of natural sources of water, including streams, lakes, and oceans; and

(C) gather evidence of how rocks, soil, and water help to make useful products.

(8) Earth and space. The student knows that the natural world includes the air around us and objects in the sky. The student is expected to:

(A) record weather information, including relative temperature, such as hot or cold, clear or cloudy, calm or windy, and rainy or icy;

(B) observe and record changes in the appearance of objects in the sky such as clouds, the Moon, and stars, including the Sun;

(C) identify characteristics of the seasons of the year and day and night; and

(D) demonstrate that air is all around us and observe that wind is moving air.

(9) Organisms and environments. The student knows that the living environment is composed of relationships between organisms and the life cycles that occur. The student is expected to:

(A) sort and classify living and nonliving things based upon whether or not they have basic needs and produce offspring;

(B) analyze and record examples of interdependence found in various situations such as terrariums and aquariums or pet and caregiver; and

(C) gather evidence of interdependence among living organisms such as energy transfer through food chains and animals using plants for shelter.

(10) Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:

(A) investigate how the external characteristics of an animal are related to where it lives, how it moves, and what it eats;

(B) identify and compare the parts of plants;

(C) compare ways that young animals resemble their parents; and

(D) observe and record life cycles of animals such as a chicken, frog, or fish.

Source: The provisions of this §112.12 adopted to be effective August 4, 2009, 34 TexReg 5063.

§116.3. Physical Education, Grade 1.

(b) Knowledge and skills.

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

(A) demonstrate an awareness of personal and general space while moving at different directions and levels such as high, medium, and low;

(B) demonstrate proper foot patterns in hopping, jumping, skipping, leaping, galloping, and sliding;

(C) demonstrate control in balancing and traveling activities;

(D) demonstrate the ability to work with a partner such as leading and following;

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

(A) describe and select physical activities that provide opportunities for enjoyment and challenge;

(B) participate in moderate to vigorous physical activities on a daily basis that cause increased heart rate, breathing rate, and perspiration;

(C) participate in appropriate exercises for flexibility in shoulders, legs, and trunk; and

(D) lift and support his/her own weight in selected activities that develop muscular strength and endurance of the arms, shoulders, abdomen, back, and legs such as hanging, hopping, and jumping.

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

(A) distinguish between active and inactive lifestyles;

(B) describe the location and function of the heart;

(C) describe how muscles and bones work together to produce movement;

(D) describe food as a source of energy; and

(E) explain the negative effects of smoking, lack of sleep, and poor dietary habits on physical performance and on the body.

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

(A) use equipment and space safely and properly;

(B) describe the importance of protective equipment in preventing injury such as helmets, elbow/knee pads, wrist guards, proper shoes, and clothing;

(C) describe how to protect himself/herself from harmful effects of the sun;

(D) list water safety rules and demonstrate simple extension rescue; and

(E) describe and demonstrate appropriate reactions to emergency situations common to physical activity settings such as universal safety precautions, and calling 911.

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

(A) demonstrate starting and stopping signals; and

(B) explain boundaries and rules for simple games.

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

- (A) follow directions and apply safe movement practices;
- (B) interact, cooperate, and respect others; and
- (C) resolve conflicts in socially acceptable ways such as talking and asking the teacher for help.

Source: The provisions of this §116.3 adopted to be effective September 1, 1998, 22 TexReg 7759.

§111.13. Mathematics, Grade 1.

(7) Measurement. The student directly compares the attributes of length, area, weight/mass, capacity, and temperature. The student uses comparative language to solve problems and answer questions. The student selects and uses nonstandard units to describe length. The student is expected to:

- (A) estimate and measure length using nonstandard units such as paper clips or sides of color tiles;
- (B) compare and order two or more concrete objects according to length (from longest to shortest);
- (F) compare and order two or more objects according to weight/mass (from heaviest to lightest); and

(12) Underlying processes and mathematical tools. The student communicates about Grade 1 mathematics using informal language. The student is expected to:

- (A) explain and record observations using objects, words, pictures, numbers, and technology; and
- (B) relate informal language to mathematical language and symbols.

(13) Underlying processes and mathematical tools. The student uses logical reasoning. The student is expected to justify his or her thinking using objects, words, pictures, numbers, and technology.

Source: The provisions of this §111.13 adopted to be effective September 1, 1998, 22 TexReg 7623; amended to be effective August 1, 2006, 30 TexReg 7471.

§110.12. English Language Arts and Reading, Grade 1, Beginning with School Year 2009-2010.

(b) Knowledge and skills.

(1) Reading/Beginning Reading Skills/Print Awareness. Students understand how English is written and printed. Students are expected to:

(E) read texts by moving from top to bottom of the page and tracking words from left to right with return sweep; and

(F) identify the information that different parts of a book provide (e.g., title, author, illustrator, table of contents).

(4) Reading/Beginning Reading/Strategies. Students comprehend a variety of texts drawing on useful strategies as needed. Students are expected to:

(A) confirm predictions about what will happen next in text by "reading the part that tells";

(28) Listening and Speaking/Speaking. Students speak clearly and to the point, using the conventions of language. Students continue to apply earlier standards with greater complexity. Students are expected to share information and ideas about the topic under discussion, speaking clearly at an appropriate pace, using the conventions of language.

(29) Listening and Speaking/Teamwork. Students work productively with others in teams. Students continue to apply earlier standards with greater complexity. Students are expected to follow agreed-upon rules for discussion, including listening to others, speaking when recognized, and making appropriate contributions.

Source: The provisions of this §110.12 adopted to be effective September 4, 2008, 33 TexReg 7162.

Grade 2

TEKS for Science, Physical Fitness, Mathematics and English Language Arts and Reading

§112.13. Science, Grade 2,

(b) Knowledge and skills.

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

(A) identify and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately;

(B) describe the importance of safe practices; and

(C) identify and demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reuse or recycling of paper, plastic, and metal.

(2) Scientific investigation and reasoning. The student develops abilities necessary to do scientific inquiry in classroom and outdoor investigations. The student is expected to:

(A) ask questions about organisms, objects, and events during observations and investigations;

- (B) plan and conduct descriptive investigations such as how organisms grow;
- (C) collect data from observations using simple equipment such as hand lenses, primary balances, thermometers, and non-standard measurement tools;
- (D) record and organize data using pictures, numbers, and words;
- (E) communicate observations and justify explanations using student-generated data from simple descriptive investigations; and
- (F) compare results of investigations with what students and scientists know about the world.

(3) Scientific investigation and reasoning. The student knows that information and critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:

- (A) identify and explain a problem in his/her own words and propose a task and solution for the problem such as lack of water in a habitat;
- (B) make predictions based on observable patterns; and
- (C) identify what a scientist is and explore what different scientists do.

(4) Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:

- (A) collect, record, and compare information using tools, including computers, hand lenses, rulers, primary balances, plastic beakers, magnets, collecting nets, notebooks, and safety goggles; timing devices, including clocks and stopwatches; weather instruments such as thermometers, wind vanes, and rain gauges; and materials to support observations of habitats of organisms such as terrariums and aquariums; and
- (B) measure and compare organisms and objects using non-standard units that approximate metric units.

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

- (A) classify matter by physical properties, including shape, relative mass, relative temperature, texture, flexibility, and whether material is a solid or liquid;
- (B) compare changes in materials caused by heating and cooling;
- (C) demonstrate that things can be done to materials to change their physical properties such as cutting, folding, sanding, and melting; and
- (D) combine materials that when put together can do things that they cannot do by themselves such as building a tower or a bridge and justify the selection of those materials based on their physical properties.

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

- (A) investigate the effects on an object by increasing or decreasing amounts of light, heat, and sound energy such as how the color of an object appears different in dimmer light or how heat melts butter;
- (B) observe and identify how magnets are used in everyday life;
- (C) trace the changes in the position of an object over time such as a cup rolling on the floor and a car rolling down a ramp; and
- (D) compare patterns of movement of objects such as sliding, rolling, and spinning.

(7) Earth and space. The student knows that the natural world includes earth materials. The student is expected to:

- (A) observe and describe rocks by size, texture, and color;
- (B) identify and compare the properties of natural sources of freshwater and saltwater; and
- (C) distinguish between natural and manmade resources.

(8) Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:

- (A) measure, record, and graph weather information, including temperature, wind conditions, precipitation, and cloud coverage, in order to identify patterns in the data;
- (B) identify the importance of weather and seasonal information to make choices in clothing, activities, and transportation;
- (C) explore the processes in the water cycle, including evaporation, condensation, and precipitation, as connected to weather conditions; and
- (D) observe, describe, and record patterns of objects in the sky, including the appearance of the Moon.

(9) Organisms and environments. The student knows that living organisms have basic needs that must be met for them to survive within their environment. The student is expected to:

- (A) identify the basic needs of plants and animals;
- (B) identify factors in the environment, including temperature and precipitation, that affect growth and behavior such as migration, hibernation, and dormancy of living things; and
- (C) compare and give examples of the ways living organisms depend on each other and on their environments such as food chains within a garden, park, beach, lake, and wooded area.

(10) Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:

- (A) observe, record, and compare how the physical characteristics and behaviors of animals help them meet their basic needs such as fins help fish move and balance in the water;
- (B) observe, record, and compare how the physical characteristics of plants help them meet their basic needs such as stems carry water throughout the plant; and
- (C) investigate and record some of the unique stages that insects undergo during their life cycle.

Source: The provisions of this §112.13 adopted to be effective August 4, 2009, 34 TexReg 5063.

§116.4. Physical Education, Grade 2.

(b) Knowledge and skills.

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

- (A) travel independently in a large group while safely and quickly changing speed and direction;
- (C) combine shapes, levels, and pathways into simple sequences;
- (D) demonstrate mature form in walking, hopping, and skipping;
- (F) demonstrate a variety of relationships in dynamic movement situations such as under, over, behind, next to, through, right, left, up, or down;
- (J) demonstrate the ability to mirror a partner;

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

- (A) describe and select physical activities that provide opportunities for enjoyment and challenge;
- (B) participate in moderate to vigorous physical activities on a daily basis that cause increased heart rate, breathing rate, and perspiration;
- (C) participate in appropriate exercises for flexibility in shoulders, legs, and trunk; and

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

- (C) identify foods that enhance a healthy heart;
- (D) explain the need for foods as a source of nutrients that provide energy for physical activity;

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

(C) list the effects the sun has on the body and describe protective measures such as sunscreen, hat, and long sleeves;

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

(A) display good sportsmanship; and

(B) treat others with respect during play.

Source: The provisions of this §116.4 adopted to be effective September 1, 1998, 22 TexReg 7759.

§111.14. Mathematics, Grade 2.

(b) Knowledge and skills.

(12) Underlying processes and mathematical tools. The student applies Grade 2 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:

(A) identify the mathematics in everyday situations;

(B) solve problems with guidance that incorporates the processes of understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;

(C) select or develop an appropriate problem-solving plan or strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting it out in order to solve a problem; and

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

(13) Underlying processes and mathematical tools. The student communicates about Grade 2 mathematics using informal language. The student is expected to:

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

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

(14) Underlying processes and mathematical tools. The student uses logical reasoning. The student is expected to justify his or her thinking using objects, words, pictures, numbers, and technology.

Source: The provisions of this §111.14 adopted to be effective September 1, 1998, 22 TexReg 7623; amended to be effective August 1, 2006, 30 TexReg 7471.

§110.13. English Language Arts and Reading, Grade 2, Beginning with School Year 2009-2010.

(b) Knowledge and skills.

(3) Reading/Beginning Reading/Strategies. Students comprehend a variety of texts drawing on useful strategies as needed. Students are expected to:

(A) use ideas (e.g., illustrations, titles, topic sentences, key words, and foreshadowing) to make and confirm predictions;

(B) ask relevant questions, seek clarification, and locate facts and details about stories and other texts and support answers with evidence from text; and

(C) establish purpose for reading selected texts and monitor comprehension, making corrections and adjustments when that understanding breaks down (e.g., identifying clues, using background knowledge, generating questions, re-reading a portion aloud).

(5) Reading/Vocabulary Development. Students understand new vocabulary and use it when reading and writing. Students are expected to:

(B) use context to determine the relevant meaning of unfamiliar words or multiple-meaning words;

(29) Listening and Speaking/Speaking. Students speak clearly and to the point, using the conventions of language. Students continue to apply earlier standards with greater complexity. Students are expected to share information and ideas that focus on the topic under discussion, speaking clearly at an appropriate pace, using the conventions of language.

(30) Listening and Speaking/Teamwork. Students work productively with others in teams. Students continue to apply earlier standards with greater complexity. Students are expected to follow agreed-upon rules for discussion, including listening to others, speaking when recognized, and making appropriate contributions.

Source: The provisions of this §110.13 adopted to be effective September 4, 2008, 33 TexReg 7162.



Grade 3

TEKS for Science, Physical Fitness, and Mathematics

§112.14. Science, Grade 3, Beginning with School Year 2010-2011.

(b) Knowledge and skills.

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

(A) demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including observing a schoolyard habitat; 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.

(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:

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

(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:

(A) collect, record, and analyze information using tools, including microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, wind vanes, rain gauges, pan balances, graduated cylinders, beakers, spring scales, hot plates, meter sticks, compasses, magnets, collecting nets, notebooks, sound recorders, and Sun, Earth, and Moon system models; timing devices, including clocks and stopwatches; and materials to support observation of habitats of organisms such as terrariums and aquariums; and

(B) use safety equipment as appropriate, including safety goggles and gloves.

(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 heat/thermal in everyday life;

(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;

(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;
- (B) explore that some characteristics of organisms are inherited such as the number of limbs on an animal or flower color and recognize that some behaviors are learned in response to living in a certain environment such as animals using tools to get food; and
- (C) 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 bugs.

Source: The provisions of this §112.14 adopted to be effective August 4, 2009, 34 TexReg 5063.

§116.5. Physical Education, Grade 3.

(b) Knowledge and skills.

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

- (A) travel in forward, sideways, and backwards and change direction quickly and safely in dynamic situations;
- (B) demonstrate proper form and smooth transitions during combinations of fundamental locomotor and body control skills such as running and jumping safely in dynamic situations;
- (C) demonstrate mature form in jogging, running, and leaping;
- (D) demonstrate moving in and out of a balanced position with control;
- (E) demonstrate proper body alignment in lifting, carrying, pushing, and pulling;
- (I) demonstrate various step patterns and combinations of movement in repeatable sequences; and

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

- (A) describe and select physical activities that provide for enjoyment and challenge;
- (B) participate in moderate to vigorous physical activities on a daily basis that cause increased heart rate, breathing rate, and perspiration;
- (C) participate in appropriate exercises for developing flexibility;

(E) identify opportunities for participation in physical activity in the community such as little league and parks and recreation.

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

(A) use equipment safely and properly;

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

(C) identify and apply safety precautions when walking, jogging, and skating in the community such as use sidewalks, walk on the left side of street when facing traffic, wear lights/reflective clothing, and be considerate of other pedestrians; and

(D) identify exercise precautions such as awareness of temperature and weather conditions and need for warm-up and cool-down activities.

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

(A) follow rules, procedures, and etiquette;

(B) persevere when not successful on the first try in learning movement skills; and

(C) accept and respect differences and similarities in physical abilities of self and others.

Source: The provisions of this §116.5 adopted to be effective September 1, 1998, 22 TexReg 7759.

§111.15. Mathematics, Grade 3.

(b) Knowledge and skills.

(5) Number, operation, and quantitative reasoning. The student estimates to determine reasonable results. The student is expected to:

(A) round whole numbers to the nearest ten or hundred to approximate reasonable results in problem situations; and

(B) use strategies including rounding and compatible numbers to estimate solutions to addition and subtraction problems.

(11) Measurement. The student directly compares the attributes of length, area, weight/mass, and capacity, and uses comparative language to solve problems and answer questions. The student selects and uses standard units to describe length, area, capacity/volume, and weight/mass. The student is expected to:

(A) use linear measurement tools to estimate and measure lengths using standard units;

(E) identify concrete models that approximate standard units for capacity and use them to measure capacity; and

(F) use concrete models that approximate cubic units to determine the volume of a given container or other three-dimensional geometric figure.

(14) Underlying processes and mathematical tools. The student applies Grade 3 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:

(A) identify the mathematics in everyday situations;

(15) Underlying processes and mathematical tools. The student communicates about Grade 3 mathematics using informal language. The student is expected to:

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

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

Source: The provisions of this §111.15 adopted to be effective September 4, 2008, 33 TexReg 7162.

Grade 4

TEKS for Science, Physical Fitness, and Mathematics

§112.15. Science, Grade 4, Beginning with School Year 2010-2011.

(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 and ethical practices. The student is expected to:

(A) demonstrate safe practices and the use of safety equipment as described in the Texas Safety Standards during classroom and outdoor investigations; and

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

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

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

- (C) represent the natural world using models such as rivers, stream tables, or fossils and identify their limitations, including accuracy and size; and
- (4) Scientific investigation and reasoning. The student knows how to use a variety of tools, materials, equipment, and models to conduct science inquiry. The student is expected to:
- (A) collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, mirrors, spring scales, pan balances, triple beam balances, graduated cylinders, beakers, hot plates, meter sticks, compasses, magnets, collecting nets, and notebooks; timing devices, including clocks and stopwatches; and materials to support observation of habitats of organisms such as terrariums and aquariums; and
 - (B) use safety equipment as appropriate, including safety goggles and gloves.
- (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, compare, and contrast physical properties of matter, including size, mass, volume, states (solid, liquid, gas), temperature, magnetism, and the ability to sink or float;
 - (B) predict the changes caused by heating and cooling such as ice becoming liquid water and condensation forming on the outside of a glass of ice water; and
 - (C) compare and contrast a variety of mixtures and solutions such as rocks in sand, sand in water, or sugar in water.
- (7) Earth and space. The students know that Earth consists of useful resources and its surface is constantly changing. The student is expected to:
- (A) examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants;
 - (B) observe and identify slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice; and
 - (C) identify and classify Earth's renewable resources, including air, plants, water, and animals; and nonrenewable resources, including coal, oil, and natural gas; and the importance of conservation.
- (8) Earth and space. The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to:
- (B) describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process; and
- (9) Organisms and environments. The student knows and understands that living organisms within an ecosystem interact with one another and with their environment. The student is expected to:

(A) investigate that most producers need sunlight, water, and carbon dioxide to make their own food, while consumers are dependent on other organisms for food; and

(10) Organisms and environments. The student knows that organisms undergo similar life processes and have structures that help them survive within their environment. The student is expected to:

(A) explore how adaptations enable organisms to survive in their environment such as comparing birds' beaks and leaves on plants;

(B) demonstrate that some likenesses between parents and offspring are inherited, passed from generation to generation such as eye color in humans or shapes of leaves in plants. Other likenesses are learned such as table manners or reading a book and seals balancing balls on their noses; and

(C) explore, illustrate, and compare life cycles in living organisms such as butterflies, beetles, radishes, or lima beans.

Source: The provisions of this §112.15 adopted to be effective August 4, 2009, 34 TexReg 5063.

§116.6. Physical Education, Grade 4.

(b) Knowledge and skills.

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

(A) demonstrate changes in speed during straight, curved, and zig zag pathways in dynamic situations;

(C) combine shapes, levels, pathways, and locomotor patterns smoothly into repeatable sequences;

(D) jump and land for height and distance using key elements for creating and absorbing force such as bending knees, swinging arms, and extending;

(E) perform sequences that include traveling, showing good body control combined with stationary balances on various body parts;

(F) demonstrate body control in jumping and landing such as land on feet, bend knees, and absorb force;

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

(A) describe and select physical activities that provide for enjoyment and challenge;

(B) name the components of health-related fitness such as strength, endurance, and flexibility;

- (C) identify and demonstrate a variety of exercises that promote flexibility;
- (D) improve flexibility in shoulders, trunk, and legs;
- (E) participate in activities that develop and maintain muscular strength and endurance; and
- (F) identify opportunities for participation in physical activity in the community such as little league and parks and recreation.

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

- (E) describe the relationship between food intake and physical activity such as calories consumed and calories expended;

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

- (A) follow rules, procedures, and etiquette;
- (B) respond to winning and losing with dignity and understanding;
- (C) work independently and stay on task; and
- (D) demonstrate effective communication, consideration and respect for the feelings of others during physical activities such as encourage others, allow others equal turns, and invite others to participate.

Source: The provisions of this §116.6 adopted to be effective September 1, 1998, 22 TexReg 7759.

§111.16. Mathematics, Grade 4.

(b) Knowledge and skills.

(11) Measurement. The student applies measurement concepts. The student is expected to estimate and measure to solve problems involving length (including perimeter) and area. The student uses measurement tools to measure capacity/volume and weight/mass. The student is expected to:

- (A) estimate and use measurement tools to determine length (including perimeter), area, capacity and weight/mass using standard units SI (metric) and customary;
- (B) perform simple conversions between different units of length, between different units of capacity, and between different units of weight within the customary measurement system;
- (C) use concrete models of standard cubic units to measure volume;
- (D) estimate volume in cubic units; and

(E) explain the difference between weight and mass.

(12) Measurement. The student applies measurement concepts. The student measures time and temperature (in degrees Fahrenheit and Celsius). The student is expected to:

(A) use a thermometer to measure temperature and changes in temperature; and

(14) Underlying processes and mathematical tools. The student applies Grade 4 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:

(A) identify the mathematics in everyday situations;

(15) Underlying processes and mathematical tools. The student communicates about Grade 4 mathematics using informal language. The student is expected to:

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

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

(16) Underlying processes and mathematical tools. The student uses logical reasoning. The student is expected to:

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

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

Source: The provisions of this §111.16 adopted to be effective September 1, 1998, 22 TexReg 7623; amended to be effective August 1, 2006, 30 TexReg 7471.

Grade 5

TEKS for Science, Physical Fitness, and Mathematics

§112.16. Science, Grade 5, Beginning with School Year 2010-2011.

(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 and ethical practices. The student is expected to:

(A) demonstrate safe practices and the use of safety equipment as described in the Texas Safety Standards during classroom and outdoor investigations; and

(B) make informed choices in the conservation, disposal, and recycling of materials.

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

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(C) draw or develop a model that represents how something works or looks that cannot be seen such as how a soda dispensing machine works; and

(D) 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:

(A) collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, prisms, mirrors, pan balances, triple beam balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices, including clocks and stopwatches; and materials to support observations of habitats or organisms such as terrariums and aquariums; and

(B) use safety equipment, including safety goggles and gloves.

(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) classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy;

(C) demonstrate that some mixtures maintain physical properties of their ingredients such as iron filings and sand; and

(D) identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water.

(7) Earth and space. The student knows Earth's surface is constantly changing and consists of useful resources. The student is expected to:

(A) explore the processes that led to the formation of sedimentary rocks and fossil fuels;

(D) identify fossils as evidence of past living organisms and the nature of the environments at the time using models.

(8) Earth and space. The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to:

(A) differentiate between weather and climate;

(B) explain how the Sun and the ocean interact in the water cycle;

(9) Organisms and environments. The student knows that there are relationships, systems, and cycles within environments. The student is expected to:

(A) observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements;

(B) describe how the flow of energy derived from the Sun, used by producers to create their own food, is transferred through a food chain and food web to consumers and decomposers;

(D) identify the significance of the carbon dioxide-oxygen cycle to the survival of plants and animals.

Source: The provisions of this §112.16 adopted to be effective August 4, 2009, 34 TexReg 5063.

§116.7. Physical Education, Grade 5.

(b) Knowledge and skills.

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

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

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

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

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

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

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

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

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

- (A) follow rules, procedures, and etiquette;
- (B) use sportsmanship skills for settling disagreements in socially acceptable ways such as remaining calm, identifying the problem, listening to others, generating solutions, or choosing a solution that is acceptable to all; and
- (C) describe how physical activity with a partner or partners can increase motivation and enhance safety.

Source: The provisions of this §116.7 adopted to be effective September 1, 1998, 22 TexReg 7759.

§111.17. Mathematics, Grade 5.

(b) Knowledge and skills.

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

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

(11) Measurement. The student applies measurement concepts. The student measures time and temperature (in degrees Fahrenheit and Celsius). The student is expected to:

- (A) solve problems involving changes in temperature; and

(15) Underlying processes and mathematical tools. The student communicates about Grade 5 mathematics using informal language. The student is expected to:

- (A) explain and record observations using objects, words, pictures, numbers, and technology; and
- (B) relate informal language to mathematical language and symbols.

(16) Underlying processes and mathematical tools. The student uses logical reasoning. The student is expected to:

- (A) make generalizations from patterns or sets of examples and nonexamples; and
- (B) justify why an answer is reasonable and explain the solution process.

Source: The provisions of this §111.17 adopted to be effective September 1, 1998, 22 TexReg 7623; amended to be effective August 1, 2006, 30 TexReg 7471.



Grade 5

TEKS for Science, English Language Arts, Mathematics, and Physical Fitness

§112.16. Science, Grade 5

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

- (A) demonstrate safe practices and the use of safety equipment as described in the Texas Safety Standards during classroom and outdoor investigations; and
- (B) make informed choices in the conservation, disposal, and recycling of materials.

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

- (B) ask well-defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology;
- (C) collect information by detailed observations and accurate measuring;
- (D) analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence;
- (F) communicate valid conclusions in both written and verbal forms; and

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

- (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(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:

- (A) collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, prisms, mirrors, pan balances, triple beam balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices, including clocks and stopwatches; and materials to support observations of habitats or organisms such as terrariums and aquariums; and

(9) Organisms and environments. The student knows that there are relationships, systems, and cycles within environments. The student is expected to:

- (A) observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements;
- (B) describe how the flow of energy derived from the Sun, used by producers to create their own food, is transferred through a food chain and food web to consumers and decomposers;
- (C) predict the effects of changes in ecosystems caused by living organisms, including humans, such as the overpopulation of grazers or the building of highways; and

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) compare the structures and functions of different species that help them live and survive such as hooves on prairie animals or webbed feet in aquatic animals;
- (B) differentiate between inherited traits of plants and animals such as spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle; and

§110.16. English Language Arts and Reading, Grade 5,

(13) Reading/Comprehension of Informational Text/Procedural Texts. Students understand how to glean and use information in procedural texts and documents. Students are expected to:

- (B) interpret factual or quantitative information presented in maps, charts, illustrations, graphs, timelines, tables, and diagrams.

(27) Listening and Speaking/Listening. Students use comprehension skills to listen attentively to others in formal and informal settings. Students continue to apply earlier standards with greater complexity. Students are expected to:

- (A) listen to and interpret a speaker's messages (both verbal and nonverbal) and ask questions to clarify the speaker's purpose or perspective;
- (B) follow, restate, and give oral instructions that include multiple action steps; and
- (C) determine both main and supporting ideas in the speaker's message.

§111.17. Mathematics, Grade 5.

(b) Knowledge and skills.

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

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

(11) Measurement. The student applies measurement concepts. The student measures time and temperature (in degrees Fahrenheit and Celsius). The student is expected to:

(A) solve problems involving changes in temperature; and

(15) Underlying processes and mathematical tools. The student communicates about Grade 5 mathematics using informal language. The student is expected to:

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

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

(16) Underlying processes and mathematical tools. The student uses logical reasoning. The student is expected to:

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

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

Source: The provisions of this §111.17 adopted to be effective September 1, 1998, 22 TexReg 7623; amended to be effective August 1, 2006, 30 TexReg 7471.

§116.7. Physical Education, Grade 5.

(b) Knowledge and skills.

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

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

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

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

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

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

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

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

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

(A) follow rules, procedures, and etiquette;

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

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

Source: The provisions of this §116.7 adopted to be effective September 1, 1998, 22 TexReg 7759.

Grade 6

TEKS for Science, Physical Fitness, Mathematics, and English Language Arts

§112.18. Science, Grade 6

(1) Scientific investigation and reasoning. The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:

(A) demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards; and

(B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.

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

(C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;

(E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.

(3) Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including

examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) use models to represent aspects of the natural world such as a model of Earth's layers;

(4) Scientific investigation and reasoning. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:

(A) use appropriate tools to collect, record, and analyze information, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum;

(12) Organisms and environments. The student knows all organisms are classified into Domains and Kingdoms. Organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:

(A) understand that all organisms are composed of one or more cells;

(B) recognize that the presence of a nucleus determines whether a cell is prokaryotic or eukaryotic;

(C) recognize that the broadest taxonomic classification of living organisms is divided into currently recognized Domains;

(D) identify the basic characteristics of organisms, including prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized Kingdoms;

(E) describe biotic and abiotic parts of an ecosystem in which organisms interact; and

(F) diagram the levels of organization within an ecosystem, including organism, population, community, and ecosystem.

§116.22. Physical Education, Grade 6.

(b) Knowledge and skills.

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

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

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

(F) identify specific foods that contain protein, vitamins, and minerals that are key elements to optimal body function;

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

Source: The provisions of this §116.22 adopted to be effective September 1, 1998, 22 TexReg 7759.

§110.18. English Language Arts and Reading, Grade 6, Beginning with School Year 2009-2010.

12) Reading/Comprehension of Informational Text/Procedural Texts. Students understand how to glean and use information in procedural texts and documents. Students are expected to:

(B) interpret factual, quantitative, or technical information presented in maps, charts, illustrations, graphs, timelines, tables, and diagrams.

(26) Listening and Speaking/Listening. Students will use comprehension skills to listen attentively to others in formal and informal settings. Students will continue to apply earlier standards with greater complexity. Students are expected to:

(A) listen to and interpret a speaker's messages (both verbal and nonverbal) and ask questions to clarify the speaker's purpose and perspective;

(B) follow and give oral instructions that include multiple action steps; and

(C) paraphrase the major ideas and supporting evidence in formal and informal presentations.

§111.22. Mathematics, Grade 6.

(8) Measurement. The student solves application problems involving estimation and measurement of length, area, time, temperature, volume, weight, and angles. The student is expected to:

(B) select and use appropriate units, tools, or formulas to measure and to solve problems involving length (including perimeter), area, time, temperature, volume, and weight;

Grade 7

§112.20. Science, Grade 8, Beginning with School Year 2010-2011.

(1) Scientific investigation and reasoning. The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:

(A) demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards; and

(B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.

2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:

(C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;

(E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.

(3) Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature;

(4) Scientific investigation and reasoning. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:

(A) use appropriate tools to collect, record, and analyze information, including lab journals/notebooks, beakers, meter sticks, graduated cylinders, anemometers, psychrometers, hot plates, test tubes, spring scales, balances, microscopes, thermometers, calculators, computers, spectrosopes, timing devices, and other equipment as needed to teach the curriculum;

(11) Organisms and environments. The student knows that interdependence occurs among living systems and the environment and that human activities can affect these systems. The student is expected to:

(A) describe producer/consumer, predator/prey, and parasite/host relationships as they occur in food webs within marine, freshwater, and terrestrial ecosystems;

(B) investigate how organisms and populations in an ecosystem depend on and may compete for biotic and abiotic factors such as quantity of light, water, range of temperatures, or soil composition;

§116.24. Physical Education, Grade 8.

(b) Knowledge and skills.

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

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

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

(D) identify proteins, fats, carbohydrates, water, vitamins, and minerals as key elements found in foods that are necessary for optimal body function;

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

(E) recognize harmful effects of the sun such as sunburn, heatstroke, heat exhaustion, and heat cramps and recommend prevention methods.

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

Source: The provisions of this §116.24 adopted to be effective September 1, 1998, 22 TexReg 7759.

Grade 7

TEKS for Science, Physical Fitness, and English Language Arts,

§112.19. Science, Grade 7

(1) Scientific investigation and reasoning. The student, for at least 40% of the instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:

(A) demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards; and

(B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.

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

(C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;

(E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.

(3) Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) use models to represent aspects of the natural world such as human body systems and plant and animal cells;

(4) Science investigation and reasoning. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:

(A) use appropriate tools to collect, record, and analyze information, including life science models, hand lens, stereoscopes, microscopes, beakers, Petri dishes, microscope slides, graduated cylinders, test tubes, meter sticks, metric rulers, metric tape measures, timing devices, hot plates, balances, thermometers, calculators, water test kits, computers, temperature and pH probes, collecting nets, insect traps, globes, digital cameras, journals/notebooks, and other equipment as needed to teach the curriculum;

(10) Organisms and environments. The student knows that there is a relationship between organisms and the environment. The student is expected to:

(A) observe and describe how different environments, including microhabitats in schoolyards and biomes, support different varieties of organisms;

(B) describe how biodiversity contributes to the sustainability of an ecosystem; and

(11) Organisms and environments. The student knows that populations and species demonstrate variation and inherit many of their unique traits through gradual processes over many generations. The student is expected to:

(B) explain variation within a population or species by comparing external features, behaviors, or physiology of organisms that enhance their survival such as migration, hibernation, or storage of food in a bulb; and

(12) Organisms and environments. The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function. The student is expected to:

(A) investigate and explain how internal structures of organisms have adaptations that allow specific functions such as gills in fish, hollow bones in birds, or xylem in plants;

(C) recognize levels of organization in plants and animals, including cells, tissues, organs, organ systems, and organisms;

(13) Organisms and environments. The student knows that a living organism must be able to maintain balance in stable internal conditions in response to external and internal stimuli. The student is expected to:

(A) investigate how organisms respond to external stimuli found in the environment such as phototropism and fight or flight; and

(B) describe and relate responses in organisms that may result from internal stimuli such as wilting in plants and fever or vomiting in animals that allow them to maintain balance.

§116.23. Physical Education, Grade 7.

(b) Knowledge and skills.

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

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

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

(E) identify proteins, fats, carbohydrates, water, vitamins, and minerals as key elements found in foods that are necessary for optimal body function;

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

Source: The provisions of this §116.23 adopted to be effective September 1, 1998, 22 TexReg 7759.

§110.19. English Language Arts and Reading, Grade 7

(26) Listening and Speaking/Listening. Students will use comprehension skills to listen attentively to others in formal and informal settings. Students will continue to apply earlier standards with greater complexity. Students are expected to:

(A) listen to and interpret a speaker's purpose by explaining the content, evaluating the delivery of the presentation, and asking questions or making comments about the evidence that supports a speaker's claims;

(B) follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems; and

(C) draw conclusions about the speaker's message by considering verbal communication (e.g., word choice, tone) and nonverbal cues (e.g., posture, gestures, facial expressions).

Grade 8

TEKS for Science, Physical Fitness, and English Language Arts,

§112.20. Science, Grade 8,

(1) Scientific investigation and reasoning. The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:

(A) demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards; and

(B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.

2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:

(C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;

(E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.

(3) Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature;

(4) Scientific investigation and reasoning. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:

(A) use appropriate tools to collect, record, and analyze information, including lab journals/notebooks, beakers, meter sticks, graduated cylinders, anemometers, psychrometers, hot plates, test tubes, spring scales, balances, microscopes, thermometers, calculators, computers, spectrometers, timing devices, and other equipment as needed to teach the curriculum;

(11) Organisms and environments. The student knows that interdependence occurs among living systems and the environment and that human activities can affect these systems. The student is expected to:

(A) describe producer/consumer, predator/prey, and parasite/host relationships as they occur in food webs within marine, freshwater, and terrestrial ecosystems;

(B) investigate how organisms and populations in an ecosystem depend on and may compete for biotic and abiotic factors such as quantity of light, water, range of temperatures, or soil composition;

§116.24. Physical Education, Grade 8.

(b) Knowledge and skills.

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

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

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

(D) identify proteins, fats, carbohydrates, water, vitamins, and minerals as key elements found in foods that are necessary for optimal body function;

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

(E) recognize harmful effects of the sun such as sunburn, heatstroke, heat exhaustion, and heat cramps and recommend prevention methods.

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

Source: The provisions of this §116.24 adopted to be effective September 1, 1998, 22 TexReg 7759.

§110.20. English Language Arts and Reading, Grade 8

(26) Listening and Speaking/Listening. Students will use comprehension skills to listen attentively to others in formal and informal settings. Students will continue to apply earlier standards with greater complexity. Students are expected to:

(A) listen to and interpret a speaker's purpose by explaining the content, evaluating the delivery of the presentation, and asking questions or making comments about the evidence that supports a speaker's claims;

(B) follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems; and



High School Readiness Standards for Biology

(10) Science concepts. The student knows that biological systems are composed of multiple levels. The student is expected to:

(B) describe the interactions that occur among systems that perform the functions of transport, reproduction, and response in plants; and

11) Science concepts. The student knows that biological systems work to achieve and maintain balance. The student is expected to:

(C) summarize the role of microorganisms in both maintaining and disrupting the health of both organisms and ecosystems; and

(12) Science concepts. The student knows that interdependence and interactions occur within an environmental system. The student is expected to:

(A) interpret relationships, including predation, parasitism, commensalism, mutualism, and competition among organisms;

(B) compare variations and adaptations of organisms in different ecosystems;

(C) analyze the flow of matter and energy through trophic levels using various models, including food chains, food webs, and ecological pyramids;

(D) recognize that long-term survival of species is dependent on changing resource bases that are limited;

(E) describe the flow of matter through the carbon and nitrogen cycles and explain the consequences of disrupting these cycles; and

(F) describe how environmental change can impact ecosystem stability.



High School Readiness Standards for Environmental Science

- (4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
- (A) identify native plants and animals using a dichotomous key;
 - (B) assess the role of native plants and animals within a local ecosystem and compare them to plants and animals in ecosystems within four other biomes;
 - (C) diagram abiotic cycles, including the rock, hydrologic, carbon, and nitrogen cycles;
 - (D) make observations and compile data about fluctuations in abiotic cycles and evaluate the effects of abiotic factors on local ecosystems and local biomes;
 - (E) measure the concentration of solute, solvent, and solubility of dissolved substances such as dissolved oxygen, chlorides, and nitrates and describe their impact on an ecosystem;
 - (F) predict how the introduction or removal of an invasive species may alter the food chain and affect existing populations in an ecosystem;
- (5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
- (A) summarize methods of land use and management and describe its effects on land fertility;
 - (B) identify source, use, quality, management, and conservation of water;
 - (C) document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability;
 - (D) identify renewable and non-renewable resources that must come from outside an ecosystem such as food, water, lumber, and energy;
 - (E) analyze and evaluate the economic significance and interdependence of resources within the environmental system; and
 - (F) evaluate the impact of waste management methods such as reduction, reuse, recycling, and composting on resource availability.
- (6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:
- (A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them;
 - (B) describe and compare renewable and non-renewable energy derived from natural and alternative sources such as oil, natural gas, coal, nuclear, solar, geothermal, hydroelectric, and wind;
 - (C) explain the flow of energy in an ecosystem, including conduction, convection, and radiation;

(D) investigate and explain the effects of energy transformations in terms of the laws of thermodynamics within an ecosystem; and

(E) investigate and identify energy interactions in an ecosystem.

(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:

(B) investigate the types of air, soil, and water pollution such as chlorofluorocarbons, carbon dioxide, pH, pesticide runoff, thermal variations, metallic ions, heavy metals, and nuclear waste;

(C) examine the concentrations of air, soil, and water pollutants using appropriate units;

(E) evaluate the effect of human activities, including habitat restoration projects, species preservation efforts, nature conservancy groups, hunting, fishing, ecotourism, all terrain vehicles, and small personal watercraft, on the environment;

(F) evaluate cost-benefit trade-offs of commercial activities such as municipal development, farming, deforestation, over-harvesting, and mining;

(G) analyze how ethical beliefs can be used to influence scientific practices such as methods for increasing food production;

(I) discuss the impact of research and technology on social ethics and legal practices in situations such as the design of new buildings, recycling, or emission standards;

(J) research the advantages and disadvantages of "going green" such as organic gardening and farming, natural methods of pest control, hydroponics, xeriscaping, energy-efficient homes and appliances, and hybrid cars;

(K) analyze past and present local, state, and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act;