4th Grade Science TEKS

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. – Science Investigation Skills

The student is expected to:

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

(2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and outdoor investigations. – Science Reasoning Skills

The student is expected to:

(A) plan and implement descriptive investigations, including asking well defined questions, making inferences, and selecting and using appropriate equipment or technology to answer his/her questions;

(B) collect and record data by observing and measuring, using the metric system, and using descriptive words and numerals such as labeled drawings, writing, and concept maps;
(C) construct simple tables, charts, bar graphs, and maps using tools and current technology to organize, examine, and evaluate data;

(D) analyze data and interpret patterns to construct reasonable explanations from data that can be observed and measured;

(E) perform repeated investigations to increase the reliability of results; and

(F) communicate valid oral and written results supported by data

(3) Scientific investigation and reasoning. The student uses critical thinking and scientific problem solving to make informed decisions. – Science Reasoning Skills

The student is expected to:

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

(B) represent the natural world using models such as the water cycle and stream tables and identify their limitations, including accuracy and size; and

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

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(4) Scientific investigation and reasoning. The student knows how to use a variety of tools, materials, equipment, and models to conduct science inquiry. – Science Investigation Skills

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

(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 mass, volume, states (solid, liquid, gas), temperature, magnetism, and the ability to sink or float;
-STAAR Readiness Standard for 5th Grade (5.5A Classifying Matter)

(B) compare and contrast a variety of mixtures, including solutions.
-STAAR Supporting Standard for 5th Grade (5.5B Mixtures and their Separation Methods)

(6) Force, motion, and energy. The student knows that energy exists in many forms and can be observed in cycles, patterns, and systems.

The student is expected to:

(A) differentiate among forms of energy, including mechanical, sound, electrical, light, and thermal;
-STAAR Readiness Standard for 5th Grade (5.6A Forms of Energy and their Use)

(B) differentiate between conductors and insulators of thermal and electrical energy;
-STAAR Readiness Standard for 5th Grade (5.5A Classifying Matter)

(C) demonstrate that electricity travels in a closed path, creating an electrical circuit; and
-STAAR Readiness Standard for 5th Grade (5.6B Flow of Electricity in Circuits)

(D) design a descriptive investigation to explore the effect of force on an object such as a push or a pull, gravity, friction, or magnetism.
-STAAR Supporting Standard for 5th Grade (5.6D Force, Motion, and the Scientific Method)

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(7) Earth and space. The student knows 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;

-STAAR Supporting Standard for 5th Grade (4.7A Properties of Soil)

(B) observe and identify slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice; and;

-STAAR Readiness Standard for 5th Grade (5.7B Landforms and their Changes)

(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.

-STAAR Supporting Standard for 5th Grade (4.7C Renewable and Nonrenewable Resources)

(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) measure, record, and predict changes in weather;

-STAAR Supporting Standard for 5th Grade (5.8A Weather vs Climate)

(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

-STAAR Supporting Standard for 5th Grade (5.8B Interaction between Sun and Water) and (4.8B Water Cycle above and on Earth Surface)

(C) collect and analyze data to identify sequences and predict patterns of change in shadows, seasons, and the observable appearance of the Moon over time.

-STAAR Supporting Standard for 5th Grade (4.8C Sequences and Patterns on Earth) and Readiness Standard (5.8C The apparent movement of the sun across the Sky)

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(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

-STAAR Readiness Standard for 5th Grade (5.9A How Organisms interact with environment to Live and Survive)

(B) describe the flow of energy through food webs, beginning with the Sun, and predict how changes in the ecosystem affect the food web.

-STAAR Readiness Standard for 5th Grade (5.9B Flow of Energy in Organisms) and Supporting Standard (5.9C Effect on Organisms by Competitors, Invasive Species, or Humans)

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

The student is expected to:

(A) explore how structures and functions enable organisms to survive in their environment;

-STAAR Readiness Standard for 5th Grade (5.10A Structures and Functions of Species to Live and Survive)

(B) explore and describe examples of traits that are inherited from parents to offspring such as eye color and shapes of leaves and behaviors that are learned such as reading a book and a wolf pack teaching their pups to hunt effectively; and

-STAAR Readiness Standard for 5th Grade (5.10B Inherited and Learned Traits of Organisms)

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

-STAAR Supporting Standard for 5th Grade (3.10B Life Cycle of Organisms)