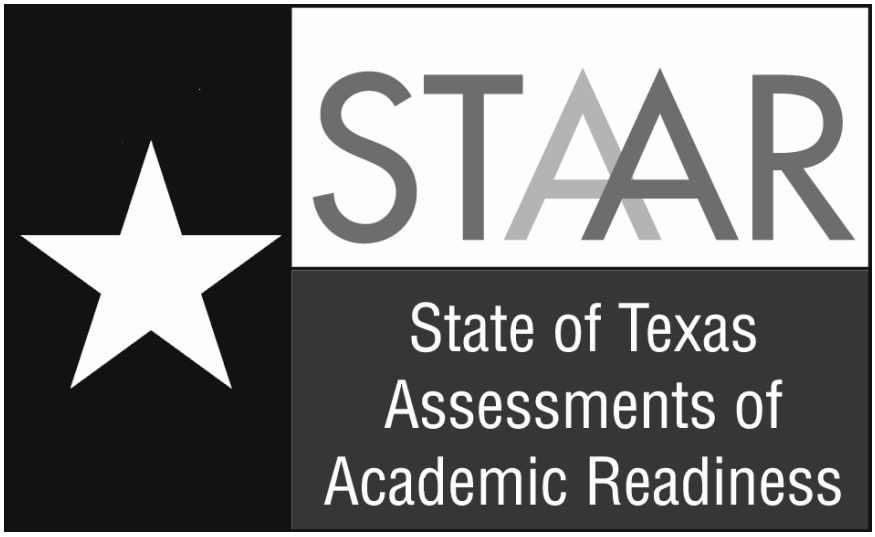

Grade 5 Science Assessment

Eligible Texas Essential Knowledge and Skills

Texas Education Agency
Student Assessment Division
May 2018

STAAR Grade 5 Science Assessment

Reporting Category 1: Matter and Energy

The student will demonstrate an understanding of the properties of matter and energy and their interactions.

Grade 5

(5.5) **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 measurable, testable, and observable physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating using water as a reference point), solubility in water, and the ability to conduct or insulate thermal energy or electric energy; ***Readiness Standard***

(B) demonstrate that some mixtures maintain physical properties of their ingredients such as iron filings and sand and sand and water; and ***Supporting Standard***

(C) 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. ***Supporting Standard***

Grade 3

(3.5) **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

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

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Reporting Category 2:
Force, Motion, and Energy

The student will demonstrate an understanding of force, motion, and energy and their relationships.

Grade 5

(5.6) **Force, motion, and energy.** The student knows that energy occurs in many forms and can be observed in cycles, patterns, and systems. The student is expected to

(A) explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy; ***Readiness Standard***

(B) demonstrate that the flow of electricity in closed circuits can produce light, heat, or sound; ***Readiness Standard***

(C) demonstrate that light travels in a straight line until it strikes an object and is reflected or travels through one medium to another and is refracted; and ***Readiness Standard***

(D) design a simple experimental investigation that tests the effect of force on an object. ***Supporting Standard***

Grade 3

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

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

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Reporting Category 3:
Earth and Space

The student will demonstrate an understanding of components, cycles, patterns, and natural events of Earth and space systems.

Grade 5

(5.7) **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; and ***Readiness Standard***

(B) recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, or ice. ***Readiness Standard***

(5.8) **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; ***Supporting Standard***

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

(C) demonstrate that Earth rotates on its axis once approximately every 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky; and ***Readiness Standard***

(D) identify and compare the physical characteristics of the Sun, Earth, and Moon. ***Supporting Standard***

Grade 4

(4.7) **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; and ***Supporting Standard***

(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. ***Supporting Standard***

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(4.8) **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; ***Supporting Standard***

(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 ***Supporting Standard***

(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. ***Supporting Standard***

Grade 3

(3.7) **Earth and space.** The student knows that Earth consists of natural resources and its surface is constantly changing. The student is expected to

(B) investigate rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides. ***Supporting Standard***

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

(D) identify the planets in Earth's solar system and their position in relation to the Sun. ***Supporting Standard***

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Reporting Category 4:
Organisms and Environments

The student will demonstrate an understanding of the structures and functions of living organisms and their interdependence on each other and on their environment.

Grade 5

(5.9) **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 nonliving components; ***Readiness Standard***

(B) describe the flow of energy within a food web, including the roles of the Sun, producers, consumers, and decomposers; ***Readiness Standard***

(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 ***Supporting Standard***

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

(5.10) **Organisms and environments.** The student knows that organisms have structures and behaviors 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 in a specific environment such as hooves on prairie animals or webbed feet in aquatic animals; and ***Readiness Standard***

(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. ***Readiness Standard***

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Grade 3

(3.9) **Organisms and environments.** The student knows and can describe patterns, cycles, systems, and relationships within the environments. The student is expected to

(A) observe and describe the physical characteristics of environments and how they support populations and communities of plants and animals within an ecosystem. ***Supporting Standard***

(3.10) **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

(B) investigate and compare how animals and plants undergo a series of orderly changes in their diverse life cycles such as tomato plants, frogs, and lady beetles. ***Supporting Standard***

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Scientific Investigation and Reasoning Standards

These skills will not be listed under a separate reporting category. Instead, they will be incorporated into at least 40% of the test in reporting categories 1–4 and identified along with content standards.

Grade 5

(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 outlined 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 conservation, disposal, and recycling of materials.

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

(A) describe, plan, and implement simple experimental investigations testing one variable;

(B) ask well defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology;

(C) collect and record information using detailed observations and accurate measuring;

(D) analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence;

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

(F) communicate valid conclusions in written form; and

(G) construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information.

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

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

(B) draw or develop a model that represents how something that cannot be seen such as the Sun, Earth, and Moon system and formation of sedimentary rock works or looks; and

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

(5.4) **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, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices, and materials to support observations of habitats or organisms such as terrariums and aquariums.

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