

Correlation to the Grade 5 Texas Essential Knowledge and Skills

This worktext is customized to the *Texas Essential Knowledge and Skills* and will help you prepare for the *State of Texas Assessments of Academic Readiness (STAAR®)* in Science for Grade 5.

Scientific and reasoning skills are listed under their separate Focus on Process (FOP) sections. In addition, these skills are incorporated into practice items throughout the text.

Texas Essential Knowledge and Skills	Measuring Up Express Lessons
TEKS 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 the 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	FOP Ch 2
(B) make informed choices in the conservation, disposal, and recycling of materials	FOP Ch 2
TEKS 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	FOP Ch 2
(B) ask well defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology	FOP Ch 1
(C) collect and record information using detailed observations and accurate measuring	FOP Ch 1, 7
(D) analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence	FOP Ch 3
(E) demonstrate that repeated investigations may increase the reliability of results	FOP Ch 5–6
(F) communicate valid conclusions in both written and verbal forms	FOP Ch 3, 6
(G) construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information	FOP Ch 4–5, 7
TEKS 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	FOP Ch 5
(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	FOP Ch 4, 7
(C) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists	FOP Ch 8
TEKS 5.4 Scientific investigation and reasoning. The student knows how to use a variety of tools and practices to conduct science inquiry. The student is expected to	
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	FOP Ch 1



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TEKS 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	1–5
(B) demonstrate that some mixtures maintain physical properties of their ingredients such as iron filings and sand and sand and water	4
(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	5
TEKS 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	6
(B) demonstrate that the flow of electricity in closed circuits can produce light, heat, or sound	7
(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	8
(D) design a simple experimental investigation that tests the effect of force on an object	9
TEKS 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	10
(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	11
TEKS 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	12
(B) explain how the Sun and the ocean interact in the water cycle	13
(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	14
(D) identify and compare the physical characteristics of the Sun, Earth, and Moon	15
TEKS 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	16
(B) describe the flow of energy within a food web, including the roles of the Sun, producers, consumers, and decomposers	17
(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	18
(D) identify fossils as evidence of past living organisms and the nature of the environments at the time using models	19
TEKS 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	20
(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	21

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TEKS 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	25
(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	26
TEKS 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	12
(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	13
(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	14, 27–28
TEKS 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	2
TEKS 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	22
TEKS 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	23
TEKS 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	24
TEKS 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	16
TEKS 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	20