Process Standards (Scientific Investigation and Reasoning Skills)	
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.
5.2	**Scientific investigation and reasoning.** The student uses scientific methods during laboratory and outdoor investigations.
5.3	**Scientific investigation and reasoning.** The student uses critical thinking and scientific problem solving to make informed decisions.
5.4	**Scientific investigation and reasoning.** The student knows how to use a variety of tools and methods to conduct science inquiry.

STAAR	Tools to Know		Ways to Show	
≥ 40% of items will be dual coded	5.1(A)	demonstrate safe practices and the use of safety equipment as described in the Texas Safety Standards during classroom and outdoor investigations	5.2(C)	collect information by detailed observations and accurate measuring
	5.1(B)	make informed choices in the conservation, disposal, and recycling of materials	5.2(D)	analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence
	5.2(A)	describe, plan, and implement simple experimental investigations testing one variable	5.2(F)	communicate valid conclusions in [both] written [and verbal] form[s]
	5.2(B)	ask well-defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology	5.2(G)	construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information
	5.2(E)	demonstrate that repeated investigations may increase the reliability of results	5.3(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
	5.4(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	5.3(B)	evaluate the accuracy of the information related to promotional materials for products and services such as nutritional labels
			5.3(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
			5.3(D)	connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists
	5.4(B)	use safety equipment, including safety goggles and gloves		

Knowledge and Skills Statements	
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.
5.6	**Force, motion, and energy.** The student knows that energy occurs in many forms and can be observed in cycles, patterns, and systems.
5.7	**Earth and space.** The student knows Earth's surface is constantly changing and consists of useful resources.
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.
5.9	**Organisms and environments.** The student knows that there are relationships, systems, and cycles within environments.
5.10	**Organisms and environments.** The student knows that organisms undergo similar life processes and have structures that help them survive within their environments.

Rptg Cat	STAAR	Readiness Standards		Supporting Standards	
1 Matter and Energy	8	5.5(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	5.5(B)	identify the boiling and freezing/melting points of water on the Celsius scale
				5.5(C)	demonstrate that some mixtures maintain physical properties of their ingredients such as iron filings and sand
				5.5(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
				3.5(C)	predict, observe, and record changes in the state of matter caused by heating or cooling

Rptg Cat	STAAR	Readiness Standards	Supporting Standards
2 Force, Motion and Energy	10	5.6(A) explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy 5.6(B) demonstrate that the flow of electricity in circuits requires a complete path through which an electric current can pass and can produce light, heat, and sound 5.6(C) demonstrate that light travels in a straight line until it strikes an object or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water	5.6(D) design an experiment that tests the effect of force on an object 3.6(B) demonstrate and observe how position and motion can be changed by pushing and pulling objects to show work being done such as swings, balls, pulleys, and wagons
3 Earth and Space	12	5.7(A) explore the processes that led to the formation of sedimentary rocks and fossil fuels 5.7(B) recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice 5.7(C) identify alternative energy resources such as wind, solar, hydroelectric, geothermal, and biofuels 5.8(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	5.7(D) identify fossils as evidence of past living organisms and the nature of the environments at the time using models 5.8(A) differentiate between weather and climate 5.8(B) explain how the Sun and the ocean interact in the water cycle 5.8(D) identify and compare the physical characteristics of the Sun, Earth, and Moon 4.7(A) examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants 4.7(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 4.8(A) measure and record changes in weather and make predictions using weather maps, weather symbols, and a map key 4.8(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 4.8(C) collect and analyze data to identify sequences and predict patterns of change in shadows, tides, seasons, and the observable appearance of the Moon over time 3.7(B) investigate rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides 3.8(D) identify the planets in Earth's solar system and their position in relation to the Sun
4 Organisms and Environments	14	5.9(A) observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements 5.9(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 5.10(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 5.10(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	5.9(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 5.9(D) identify the significance of the carbon dioxide-oxygen cycle to the survival of plants and animals 5.10(C) describe the differences between complete and incomplete metamorphosis of insects 3.9(A) observe and describe the physical characteristics of environments and how they support populations and communities within an ecosystem 3.10(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
# Items	44 (1 Grid)	26-29 questions from Readiness Standards	15-18 questions from Supporting Standards