

Grade 3 Side-by-Side



2021 Knowledge and Skill Statement/Student Expectation	2021 Text	2017 Knowledge and Skill Statement/Student Expectation	2017 Text	Notes from TEA Staff
SCIENCE.3.1	Scientific and engineering practices. The student asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:	3.1	Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures and environmentally appropriate practices. The student is expected to:	
		3.2	Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:	
SCIENCE.3.1.A	ask questions and define problems based on observations or information from text, phenomena, models, or investigations;	3.2.A	plan and implement descriptive investigations, including asking and answering questions, making inferences, and selecting and using equipment or technology needed, to solve a specific problem in the natural world;	
SCIENCE.3.1.B	use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems;			
SCIENCE.3.1.C	demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards;	3.1.A	demonstrate safe practices as described in Texas Education Agency-approved safety standards during classroom and outdoor investigations using safety equipment as appropriate, including safety goggles or chemical splash goggles, as appropriate, and gloves, and	
SCIENCE.3.1.D	use tools, including hand lenses; metric rulers; Celsius thermometers; wind vanes; rain gauges; graduated cylinders; beakers; digital scales ; hot plates; meter sticks; magnets; notebooks; Sun, Earth, Moon system models; timing devices; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets , and cameras, to observe, measure, test, and analyze information;	3.4	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	
		3.4.A	collect, record, and analyze information using tools, including cameras, computers, hand lenses, metric rulers, Celsius thermometers, wind vanes, rain gauges, pan balances , graduated cylinders, beakers, spring scales , hot plates, meter sticks, magnets, collecting nets, notebooks, and Sun, Earth, and Moon system models; timing devices; and materials to support observation of habitats of organisms such as terrariums and aquariums.	
SCIENCE.3.1.E	collect observations and measurements as evidence ;	3.2.B	collect and record data by observing and measuring using the metric system and recognize differences between observed and measured data;	
SCIENCE.3.1.F	construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect; and	3.2.C	construct maps, graphic organizers, simple tables, charts, and bar graphs using tools and current technology to organize, examine, and evaluate measured data;	The Knowledge and Skill statement 3.2 was developed for examining and evaluating measured data.
SCIENCE.3.1.G	develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.	3.3.B	represent the natural world using models such as volcanoes or the Sun, Earth, and Moon system and identify their limitations, including size, properties, and materials; and	The Student Expectation 3.2.A was developed for the limitations of models.

SCIENCE.3.2	<u>Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:</u>	3.3	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:	
SCIENCE.3.2.A	<u>identify advantages and limitations of models such as their size, scale, properties, and materials;</u>			
SCIENCE.3.2.B	analyze data <u>by identifying any significant features, patterns, or sources of error;</u>	3.2.D	analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations;	The Knowledge and Skill statement 3.3 was developed for explanations.
SCIENCE.3.2.C	<u>use mathematical calculations to compare patterns and relationships;</u> and			
SCIENCE.3.2.D	<u>evaluate a design or object using criteria.</u>	3.2.E	demonstrate that repeated investigations may increase the reliability of results; and	
SCIENCE.3.3	<u>Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:</u>			
SCIENCE.3.3.A	<u>develop</u> explanations <u>and propose solutions supported by data and models;</u>	3.2.D	analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations;	Analyzing and interpreting data have been moved into 3.2.B.
SCIENCE.3.3.B	communicate <u>explanations and solutions individually and collaboratively in a variety of settings and formats;</u> and	3.2.F	communicate valid conclusions in both written and verbal forms; and	Students are now being asked to communicate not only as scientists but also as engineers.
SCIENCE.3.3.C	<u>listen actively to others'</u> explanations <u>to identify relevant</u> evidence <u>and engage respectfully in scientific discussion.</u>	3.3.A	analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing;	
SCIENCE.3.4	<u>Scientific and engineering practices.</u> The student knows the contributions of scientists and <u>recognizes the importance of scientific research and innovation for society.</u> The student is expected to:	3.3.C	connect grade-level appropriate science concepts with the history of science, science-careers, and contributions of scientists.	
SCIENCE.3.4.A	<u>explain how scientific discoveries and innovative solutions to problems impact science and society; and</u>			
SCIENCE.3.4.B	<u>research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field to investigate STEM careers.</u>			
SCIENCE.3.5	<u>Recurring themes and concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:</u>			
SCIENCE.3.5.A	<u>identify and use patterns to explain scientific phenomena or to design solutions;</u>			
SCIENCE.3.5.B	<u>identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems;</u>			

SCIENCE.3.5.C	use scale, proportion, and quantity to describe, compare, or model different systems;			
SCIENCE.3.5.D	examine and model the parts of a system and their interdependence in the function of the system;			
SCIENCE.3.5.E	investigate the flow of energy and cycling of matter through systems;			
SCIENCE.3.5.F	explain the relationship between the structure and function of objects, organisms, and systems; and			
SCIENCE.3.5.G	explain how factors or conditions impact stability and change in objects, organisms, and systems.			
SCIENCE.3.6	Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified , classified, changed, and used. The student is expected to:	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.	
SCIENCE.3.6.A	measure, test, and record physical properties of matter, including temperature, mass, magnetism, and the ability to sink or float in water ;	3.5.A	measure, test, and record physical properties of matter, including temperature, mass, magnetism, and the ability to sink or float;	
SCIENCE.3.6.B	describe and classify samples of matter as solids, liquids, and gases and demonstrate that solids have a definite shape and that liquids and gases take the shape of their container;	3.5.B	describe and classify samples of matter as solids, liquids, and gases and demonstrate that solids have a definite shape and that liquids and gases take the shape of their container;	
SCIENCE.3.6.C	predict, observe, and record changes in the state of matter caused by heating or cooling in a variety of substances such as ice becoming liquid water, condensation forming on the outside of a glass, or liquid water being heated to the point of becoming water vapor (gas) ; and	3.5.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;	
SCIENCE.3.6.D	demonstrate that materials can be combined based on their physical properties to create or modify objects such as building a tower or adding clay to sand to make a stronger brick and justify the selection of materials based on their physical properties.	3.5.D	explore and recognize that a mixture is created when two materials are combined such as gravel and sand or metal and plastic paper clips.	Mixtures have been moved to Grade 4.
		2.5.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.	
SCIENCE.3.7	Force, motion, and energy. The student knows the nature of forces and the patterns of their interactions . The student is expected to:	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:	Force and motion and energy are now two different Knowledge and Skill statements.
SCIENCE.3.7.A	demonstrate and describe forces acting on an object in contact or at a distance, including magnetism, gravity, and pushes and pulls ; and	3.6.C	observe forces such as magnetism and gravity acting on objects.	
SCIENCE.3.7.B	plan and conduct a descriptive investigation to demonstrate and explain how position and motion can be changed by pushing and pulling objects such as swings, balls, and wagons.	3.6.B	demonstrate and observe how position and motion can be changed by pushing and pulling objects such as swings, balls, and wagons;	
SCIENCE.3.8	Force, motion, and energy. The student knows that energy is everywhere and can be observed in cycles, patterns, and systems . The student is expected to:	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:	Force and motion and energy are now two different Knowledge and Skill statements.
SCIENCE.3.8.A	Identify everyday examples of energy, including light, sound, thermal, and mechanical; and	3.6.A	explore different forms of energy, including mechanical, light, sound, and thermal in everyday life;	

SCIENCE.3.8.B	<u>plan and conduct investigations that demonstrate how the speed of an object is related to its mechanical energy.</u>			
SCIENCE.3.9	Earth and space. The student knows there are recognizable objects and patterns in <u>Earth's solar system</u> . The student is expected to:	3.8	Earth and space. The student knows there are recognizable patterns in the natural world and among objects in the sky.	
SCIENCE.3.9.A	construct models <u>and explain</u> the orbits of the Sun, Earth, and Moon in relation to each other; and	3.8.C	construct models that demonstrate the relationship of the Sun, Earth, and Moon, including orbits and positions ;	
SCIENCE.3.9.B	identify the <u>order of</u> the planets in Earth's solar system in relation to the Sun.	3.8.D	identify the planets in Earth's solar system and their position in relation to the Sun.	
SCIENCE.3.10	Earth and space. The student knows that <u>there are recognizable processes that</u> change <u>Earth over time</u> . The student is expected to:	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:	Natural resources and changes to Earth are now two different Knowledge and Skill statements.
SCIENCE.3.10.A	compare and <u>describe</u> day-to-day weather in different locations at the same time, including air temperature, wind direction, and precipitation;	3.8.A	observe, measure, record, and compare day-to-day weather changes in different locations at the same time that include air temperature, wind direction, and precipitation;	
SCIENCE.3.10.B	<u>investigate and explain</u> how soils <u>such as sand and clay</u> are formed by weathering of rock and by decomposition of plant and animal remains; and	3.7.A	explore and record how soils are formed by weathering of rock and the decomposition of plant and animal remains;	
SCIENCE.3.10.C	<u>model and describe</u> rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides.	3.7.B	investigate rapid changes in the Earth's surface such as volcanic eruptions, earthquakes, and landslides;	
SCIENCE.3.11	Earth and space. The student <u>understands how</u> natural resources <u>are important and can be managed</u> . The student is expected to:	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:	Natural resources and changes to Earth are now two different Knowledge and Skill statements.
SCIENCE.3.11.A	explore <u>and explain how humans use</u> natural resources such as <u>in construction, in agriculture, in transportation</u> , and to make products;	3.7.C	explore the characteristics of natural resources that make them useful in products and materials such as clothing and furniture and how resources may be conserved .	
SCIENCE.3.11.B	<u>explain why the conservation of natural resources is important; and</u>			
SCIENCE.3.11.C	<u>identify ways to</u> conserve natural resources <u>through reducing</u> , reusing, or recycling.	3.1.B	make informed choices in the use and conservation of natural resources by recycling or reusing materials such as paper, aluminum cans, and plastics .	
SCIENCE.3.12	Organisms and environments. The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:	3.9	Organisms and environments. The student knows and can describe patterns, cycles, systems, and relationships within the environments. The student is expected to:	
SCIENCE.3.12.A	<u>explain how temperature and precipitation affect animal growth and behavior through migration and hibernation and plant responses through dormancy.</u>	3.9.A	observe and describe the physical characteristics of environments and how they support populations and communities of plants and animals within an ecosystem;	The Student Expectation was moved here from Grade 2.
SCIENCE.3.12.B	identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem;	3.9.B	identify and describe the flow of energy in a food chain and predict how changes in a food chain affect the ecosystem such as removal of frogs from a pond or bees from a field;	
SCIENCE.3.12.C	describe <u>how natural</u> changes to the environment such as floods and droughts <u>cause</u> some organisms <u>to</u> thrive and others <u>to</u> perish or move to new locations; and	3.9.C	describe environmental changes such as floods and droughts where some organisms thrive and others perish or move to new locations.	

SCIENCE.3.12.D	identify fossils as evidence of past living organisms and environments, <u>including common Texas fossils.</u>	5.9.D	identify fossils as evidence of past living organisms and the nature of the environments at the time using models.	
SCIENCE.3.13	Organisms and environments. The student knows that organisms undergo similar life processes and have structures <u>that function</u> to help them survive within their environments. The student is expected to:	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:	
SCIENCE.3.13.A	explore <u>and explain</u> how <u>external</u> structures and functions of animals <u>such as the neck of a giraffe or webbed feet on a duck enable</u> them to survive in <u>their</u> environment; and	3.10.A	explore how structures and functions of plants and animals allow them to survive in a particular environment;	Structures and functions of plants have been moved to Grade 4.
SCIENCE.3.13.B	<u>explore, illustrate, and</u> compare life cycles <u>in organisms</u> such as beetles, <u>crickets, radishes, or lima beans.</u>	3.10.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.	
KEY	<u>Blue double underline: indicates content new to the grade level</u>		Orange strike through: indicates content was deleted	
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