Grade 5 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.5.1	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:	5.1	Scientific ~~investigation and reasoning. The student~~ conducts classroom ~~and outdoor~~ investigations ~~following home and school~~ safety ~~procedures and uses environmentally appropriate and ethical practices~~. The student is expected to:	
		5.2	Scientific ~~investigation and reasoning. The student uses~~ scientific ~~practices during~~ laboratory and ~~outdoor~~ investigations. The student is expected to:	
SCIENCE.5.1.A	ask questions and define problems based on observations or information from text, phenomena, models, or investigations;	5.2.B	ask ~~well-defined~~ questions, ~~formulate testable hypotheses, and select and use appropriate equipment and technology~~;	
SCIENCE.5.1.B	use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems;	5.2.A	~~describe~~, plan, and ~~implement simple experimental~~ investigations ~~testing one variable~~;	
SCIENCE.5.1.C	demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards;	5.1.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	
SCIENCE.5.1.D	use tools, including calculators, microscopes, hand lenses, metric rulers, Celsius thermometers, prisms, concave and convex lenses, laser pointers, mirrors, digital scales, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, notebooks, timing devices, materials for building circuits, materials to support observations of habitats or organisms such as terrariums and aquariums, and materials to support digital data collection such as computers, tablets, and cameras to observe, measure, test, and analyze information;	5.4	~~Scientific investigation and reasoning. The student knows how to~~ use ~~a variety of~~ tools ~~and methods to conduct science inquiry.~~	
		5.4.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.	
SCIENCE.5.1.E	collect observations and measurements as evidence;	5.2.C	collect and ~~record information using detailed~~ observations and ~~accurate~~ measuring;	
SCIENCE.5.1.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 effet.B41.86(ap)-3.42fEMC BT/P wes1		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:			
	evaluate experimental and engineering designs.	~~5.2.E~~	~~demonstrate that repeated investigations may increase the reliability of results;~~	

SCIENCE.5.3

SCIENCE.5.6.C	compare the properties of substances before and after they are combined into a solution and demonstrate that matter is conserved in solutions; and	**5.5.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;~~
SCIENCE.5.6.D	illustrate how matter is made up of particles that are too small to be seen such as air in a balloon.		
SCIENCE.5.7	Force, motion, and energy. The student knows the nature of forces and the patterns of their interactions. The student is expected to:		
SCIENCE.5.7.A	investigate and explain how equal and unequal forces acting on an object cause patterns of motion and transfer of energy; and		
SCIENCE.5.7.B	design a simple experimental investigation that tests the effect of force on an object in a system such as a car on a ramp or a balloon rocket on a string.	**5.6.D**	design a simple experimental investigation that tests the effect of force on an object.
SCIENCE.5.8	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:	**5.6**	Force, motion, and energy. The student knows that energy ~~occurs in many forms~~ and can be observed in cycles, patterns, and systems.
SCIENCE.5.8.A	investigate and describe the transformation of energy in systems such as energy in a flashlight battery that changes from chemical energy to electrical energy to light energy;	**~~5.6.A~~**	~~explore the uses of energy, including mechanical,~~ light, ~~thermal,~~ electrical, ~~and sound energy;~~

SCIENCE.5.12.B	predict how changes in the ecosystem affect the cycling of matter and flow of energy in a food web; and	**5.9.B**	~~describe the~~ flow of energy within a food web, ~~including the roles of the Sun, producers, consumers, and decomposers;~~	Producers, consumers, and decomposers are taught in Grade 4.
SCIENCE.5.12.C	describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem.	**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 fossils as evidence of past living organisms and the nature of the environments at the time using models.~~	Describing environments based on fossil evidence has been moved to Grade 4.
SCIENCE.5.13	Organisms and environments. The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:	**5.10**	Organisms and environments. The student knows that organisms have structures and behaviors that help them survive within their environments.	
SCIENCE.5.13.A	analyze the structures and functions of different species to identify how organisms survive in the same environment; and	**5.10.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;~~	
SCIENCE.5.13.B	explain how instinctual behavioral traits such as turtle hatchlings returning to the sea and learned behavioral traits such as orcas hunting in packs increase chances of survival.	**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~~;	Inherited traits have been moved to Grade 4.
KEY	**Blue double underline: indicates content new to the grade level**		**~~Orange strike through: indicates content was deleted~~**	