LAB-AIDS/SEPUP ALIGNMENT TO TEXAS ESSENTIAL KNOWLEDGE AND SKILLS (TEKS)

Science 6-8

With Assessment Guidelines information

Materials from the Science Education for Public Understanding Program (SEPUP) are developed at the Lawrence Hall of Science, at the University of California, Berkeley, and distributed nationally by LAB-AIDS, Inc. This correlation is intended to show selected locations in SEPUP programs that support the TEKS. It is not an exhaustive list; other locations may exist that are not listed here.

This document was prepared by the staff at SEPUP, with assistance from Oralia Gil, LAB-AIDS Curriculum Specialist. For more information about this correlation or for questions about review copies, presentations, or any matters related to sales or service, please visit us on the web at www.lab-aids.com.

Grade 6

(C = Chemistry, EN = Energy, M = Simple Machines, EA = The Earth, S = Solar System, O = Organisms and Environments)

TEKS Citation	Description	Location	Assessment
112.18(b) (1)	**Scientific investigation and reasoning:** The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:		
(A)	demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards	C1, C3, C7, C8, C9, EN13, EN15, EN24, EN25, EN27, EA45, EA46	Safety Quiz, Science Laboratory Observation Checklist, **C7** AQ6
(B)	practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.	C9	Safety Quiz, Science Laboratory Observation Checklist
(2)	**Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:		
(A)	plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology	EN18, EN19, EN22, EN24, EN26, EN27, EA45	**C8** AQ4, **EN18** AQ5, **EN24** Proc, **EA45** Proc, **O82** AQ3
(B)	design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology	EN13, O82	**EN13** Proc, **O82** Proc
(C)	collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers	C3, C7, C8, C9, EN13, EN15, EN18, EN19, EN20, EN22, EN24,EN25, EN26, EN27, EN28, M32, M33, M34, M36, M37, M38, EA40,	**C5** AQ3, **C8** AQ4, **M37** AQ6

TEKS Citation	Description	Location	Assessment
		EA43, EA45, EA46, EA49, EA51, S60, O72, O73, O75, O77, O80, O82	
(D)	construct tables and graphs, using repeated trials and means, to organize data and identify patterns	C2, C4, C6, C7, C8, C9, EN13, EN15, EN22, EN24, EN25, EN26, EN27, M32, M33, M34, M36, M37, M38, EA45, EA49, S67, O77, O81, O82	**C4** AQ7, **C7** AQ5, **C8** AQ4, **EN13** AQ4, **EN27** Proc, **EA57** AQ3, **M37** AQ6
(E)	analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends	C1, C2, C3, C4, C6, C7, C8, C9, EN13, EN15, EN19, EN22, EN23, EN24, EN25, EN26, EN27, EN30, M32, M33, M34, M36, M37, M38, EA45, EA58, S67	**C1** AQ1, **C8** AQ & 4, **C9** AQ1, **EN13** AQ1 to 4, **EN15** AQ3, **EN20** AQ5, **EN22** AQ6, **EN23** AQ4, **EN 24** AQ1 to 5, **EN25** AQ5, **EN26** AQ1 & 2, **M32** AQ4 & 5, **M33** AQ 2 to 4, **M34** AQ4, **M36** AQ1 to 3, **M38** AQ1, **EA40** AQ3, **EA45** AQ3, **O78** AQ 1 & 2, **O82** AQ1
(3)	**Scientific investigation and reasoning.** The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:		
(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	C2, C3, C10, EN16, EA39, EA58, S62	**C1** AQ2, **EA50** AQ4, **S62** AQ3, **S67** AQ4

TEKS Citation	Description	Location	Assessment
(B)	use models to represent aspects of the natural world such as a model of Earth's layers	EA42, EA48, EA49, EA51, EA56, EA57, S64, S65, O78	**EA48** AQ3. **S64** AQ3
(C)	identify advantages and limitations of models such as size, scale, properties, and materials	S64	**EA48** AQ2, **EA49** AQ4, **S64** AQ2, **S65** AQ1, **O78** AQ4
(D)	relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.	EA47, EA52, S61, S66, O74, O82	***S59*** *AQ2*, **S60** AQ3, **S61** AQ1 & 2, **S66** AQ5, **O74** AQ3
(4)	**Science investigation and reasoning:** The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:		
(A)	use appropriate tools to collect, record, and analyze information, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum	C3, C7, C8, C9, C11, EN12, EN13, EN15, EN18, EN19, EN20, EN22, EN24, EN25, EN26, EN27, EN28, M32, M33, M34, M36, M37, EA43, EA45, EA46, EA48, EA49, EA50, EA51, EA52, EA55, EA56, EA57, S60, S62, S63, S64, S65, S67, S69, O72, O73, O74, O75, O77, O78, O80, O81, O82	**C8** AQ4, **C9** AQ5 to 7, **S65** AQ3
(B)	use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher	C1, C3, C7, C8, C9, EN13, EA45, EA46	Safety Quiz, Science Laboratory Observation Checklist
(5)	**Matter and energy.** The student knows the difference between elements and compounds. The student is expected to:		

TEKS Citation	Description	Location	Assessment
(A)	know that an element is a pure substance represented by chemical symbols	C3, C4, C5, C6	**C2** AQ4, **C3** AQ4, **C6** AQ1
(B)	recognize that a limited number of the many known elements comprise the largest portion of solid Earth, living matter, oceans, and the atmosphere	C4, C5, C6	**C4** AQ6, **C11** AQ1
(C)	differentiate between elements and compounds on the most basic level (S)	C2, C5	**C2** AQ2 to 4, **C5** AQ1 & 5, **C6** AQ1
(D)	identify the formation of a new substance by using the evidence of a possible chemical change such as production of a gas, change in temperature, production of a precipitate, or color change	C9, C10	**C9** AQ3, **C10** AQ3
(6)	**Matter and energy.** The student knows that matter has physical properties that can be used for classification. The student is expected to:		
(A)	compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability	C3, C5	**C3** AQ5, **C5** AQ4, **C6** AQ4
(B)	calculate density to identify an unknown substance	C8	**C8** AQ3
(C)	test the physical properties of minerals, including hardness, color, luster, and streak	*EA43, EA44*, EA45, EA46	**EA45** Proc
(7)	**Matter and energy.** The student knows that some of the Earth's energy resources are available on a nearly perpetual basis, while others can be renewed over a relatively short period of time. Some energy resources, once depleted, are essentially nonrenewable. The student is expected to:		
(A)	research and debate the advantages and disadvantages of using coal, oil, natural gas, nuclear power, biomass, wind, hydropower, geothermal, and solar resources	EN12	**EN12** AQ2 & 3
(B)	design a logical plan to manage energy resources in the home, school, or community.	*EN12, EN16, EN25, EN28, EN29*, EN30	***EN25*** *AQ5,* ***EN28*** *AQ3 & 4,* ***EN29*** *AQ1 & 3*, **EN30** AQ1 to 3

TEKS Citation	Description	Location	Assessment
(8)	**Force, motion, and energy.** The student knows that force and motion are related to potential and kinetic energy. The student is expected to:		
(A)	compare and contrast potential and kinetic energy	EN13, EN14, EN17, M31, M32	**EN1** AQ1 to 5, **EN14** AQ1 to 4, **EN17** AQ2, **M31** AQ1 & 2, **M32** AQ2
(B)	identify and describe the changes in position, direction, and speed of an object when acted upon by unbalanced forces	M36, M37, M38	**M36** AQ1 to 4, **M37** AQ2
(C)	calculate average speed using distance and time measurements	M36, M37, M38	**M37** AQ6
(D)	measure and graph changes in motion	M36, M37	**M37** AQ6
(E)	investigate how inclined planes and pulleys can be used to change the amount of force to move an object	M31, M32, M33, M34, M35, M38	**M32** AQ3 & 4, **M33** AQ1 & 4, **M34** AQ1 & 4, **M35** AQ2 & 3, **M38** AQ1 & 2
(9)	**Force, motion, and energy.** The student knows that the Law of Conservation of Energy states that energy can neither be created nor destroyed, it just changes form. The student is expected to:		
(A)	investigate methods of thermal energy transfer, including conduction, convection, and radiation	EN18, EN19, EN20, EN21, EN22, EN26, EN27, EN28, EN29	**EN18** AQ5, **EN20** AQ5 & 6, **EN21** AQ2 & 3
(B)	verify through investigations that thermal energy moves in a predictable pattern from warmer to cooler until all the substances attain the same temperature such as an ice cube melting	EN18, EN19, EN22	**EN18** AQ5, **EN22** AQ2 to 5
(C)	demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy	EN13, EN15, EN24, EN25, EN26, EN27	**EN15** AQ4
(10)	**Earth and space.** The student understands the structure of the Earth, the rock cycle, and plate tectonics. The		

TEKS Citation	Description	Location	Assessment
	student is expected to:		
(A)	build a model to illustrate the structural layers of Earth, including the inner core, outer core, mantle, crust, asthenosphere, and lithosphere	*EA47,* EA48	**EA48** Proc
(B)	classify rocks as metamorphic, igneous, or sedimentary by the processes of their formation	EA40, EA41, EA42	**EA40** AQ2 & 3, **EA41** AQ6, **EA42** AQ1 to 7
(C)	identify the major tectonic plates, including Eurasian, African, Indo-Australian, Pacific, North American, and South American	*EA51,* EA52, EA53, *EA54*	
(D)	describe how plate tectonics causes major geological events such as ocean basins, earthquakes, volcanic eruptions, and mountain building	*EA51,* EA52, EA53, EA54, EA56, EA57	***EA52*** *AQ2*, **EA53** AQ3, **EA54** AQ1, **EA57** AQ4
(11)	**Earth and space.** The student understands the organization of our solar system and the relationships among the various bodies that comprise it. The student is expected to:		
(A)	describe the physical properties, locations, and movements of the Sun, planets, Galilean moons, meteors, asteroids, and comets	*S60*, S62, S63, S64, S65, S66	**S62** AQ2, **S66** AQ1 to 4
(B)	understand that gravity is the force that governs the motion of our solar system	S67, S68	**S67** AQ2 to 4, **S68** AQ3 & 4
(C)	describe the history and future of space exploration, including the types of equipment and transportation needed for space travel	S59, S61, S69, S70	**S59** AQ2, **S67** AQ1 & 2, **S69** AQ1
(12)	**Organisms and environments**. The student knows all organisms are classified into Domains and Kingdoms. Organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:		
(A)	understand that all organisms are composed of one or more cells	*O74*, *O75*, O76, *O81*	***O74*** *AQ1*

TEKS Citation	Description	Location	Assessment
(B)	recognize that the presence of a nucleus determines whether a cell is prokaryotic or eukaryotic	*O75*, O76, *O81*	***O75*** *AQ1 to 3*, **O76** AQ3
(C)	recognize that the broadest taxonomic classification of living organisms is divided into currently recognized Domains	O76, O81	**O76** AQ4 & 5
(D)	identify the basic characteristics of organisms, including prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized Kingdoms	O73, O76, O79	**O74** AQ1 & 2, **O76** AQ1, 2, 4, **O77** AQ4
(E)	describe biotic and abiotic parts of an ecosystem in which organisms interact	*O73*, *O78*	**O73** AQ1 & 4, **O77** AQ2, **O78** AQ1 to 3, **O79** AQ3, **O12** AQ2, **O83** AQ2
(F)	diagram the levels of organization within an ecosystem, including organism, population, community, and ecosystem	O78, O79	**O79** AQ1 & 2

Grade 7

(B = Body Systems, C = Cell Structure and Function, G = Genetics, Ec = Ecology, Ev = Evolution, En = Environmental Change, L = Life in Space)

TEKS Citation	Description	Location	Assessment
112.18(b) (1)	**Scientific investigation and reasoning:** The student, for at least 40% of the instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:		
(A)	demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards	B3, B4, B6, B7, B9, B11, B15, B17, C22, C24, C28, C31, C32, Ec49, Ec56, L85	Safety Quiz
(B)	practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials	B4, B7, C24, C28	Safety Quiz
(2)	**Scientific investigation and reasoning:** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:		
(A)	plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology	B9, B13	**B9** AQ1, **B17** AQ6, **C28** AQ2
(B)	design and implement experimental investigations by making observations, asking well- defined questions, formulating testable hypotheses, and using appropriate equipment and technology	B6, B7, Ec55, EN78, L84	**B6** Proc, AQ1, **B7** Proc, AQ5, **L84** Proc
(C)	collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers	B3, B4, B6, B9, B11, B17, C22, C24, C26, C28, C31, C32, G34, G42, Ec46, Ec49, En71, En74, En77, En78, L84,	**B3** Proc, **B9** Proc, **C32** AQ1, **En69** AQ1

TEKS Citation	Description	Location	Assessment
		L85	
(D)	construct tables and graphs, using repeated trials and means, to organize data and identify patterns	B3, B6, B7, B9, B11, B15, B17, C22, C31, C32, G34, G41, Ev64, En77	**B12** AQ6, **C31** AQ4, **En69** AQ1
(E)	analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends	B21, C22, G37, Ev64, Ev66, En68, En69, En79, L80	**B3** Aq3, **B4** AQ3, **B6** AQ4, **B7** AQ6, **B9** AQ2 & AQ3, **B11** AQ1, AQ3, AQ4, **B14** AQ2 to AQ4, **B17** AQ1, AQ2 **C2** AQ1, **C28** AQ1, **C31** AQ4, **C32** AQ3 **C33** AQ1, **G34** AQ1, **G42** AQ1 & AQ2, **Ev60** AQ1, **Ev66** AQ2, **En68** AQ1, AQ2, AQ4, **En71** AQ1, **L80** AQ1 to 3, **L81** AQ1 & AQ2, **L83** AQ1 & AQ2, **L84** AQ1 7 AQ2
(3)	**Scientific investigation and reasoning:** The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:		
(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	B2, C33, G36, G37, Ev61, Ec48, Ev66	**B6** AQ4, **G35** AQ2, **G37** AQ1, **Ec55** AQ5, **Ev61** AQ1, **Ev64** AQ5, **Ev66** AQ 2 & AQ4, **Ev67** AQ4, **En68** AQ3, **L87** AQ2
(B)	use models to represent aspects of the natural world such as human body systems and plant and animal cells	B2, B3, B6, B11, B13, B15, B16, C22, C25, C32, G37, G38, G50, G53,	**B13** AQ2, **B15** AQ2 & AQ3

TEKS Citation	Description	Location	Assessment
		Ev60, Ev62, En71, En73, En74. En77, En78	
(C)	identify advantages and limitations of models such as size, scale, properties, and materials	G37	**B2** AQ4, **B3** AQ4, **B11** AQ2, **B13** AQ1 & AQ3, **B15** AQ6, **B16** AQ1, **C22** AQ4, **C25** AQ4, **G38** AQ5, **Ev61** AQ5, **Ev62** AQ6, **En73** AQ1, **En77** AQ1
(D)	relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content	B12, B14, C23, C25, C27, C29, G39, Ev61	**B3** AQ5, **G39** AQ6, **C29** AQ1
(4)	**Science investigation and reasoning:** The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:		
(A)	use appropriate tools to collect, record, and analyze information, including life science models, hand lens, stereoscopes, microscopes, beakers, Petri dishes, microscope slides, graduated cylinders, test tubes, meter sticks, metric rulers, metric tape measures, timing devices, hot plates, balances, thermometers, calculators, water test kits, computers, temperature and pH probes, collecting nets, insect traps, globes, digital cameras, journals/notebooks, and other equipment as needed to teach the curriculum	B2, B3, B4, B6, B7, B9, B10, B11, B12, B13, B15, B17, B19, B21, C22, C23, C24, C25, C26, C28, C29, C30, C31, C32, C33, G34, G35, G42, Ec45, Ec46, Ec47, Ec49, Ec50, Ec52, Ec53, Ec54, Ec55, Ec56, En68, En71, En72, En73, En74, En77, En78, En79, L80, L83, L84, L85	**C33** AQ5
(B)	use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher	B3, B4, B6, B7,B9, B15, C22, C24, C28, C31, C32, Ec56, En71, En73, En74	Safety Quiz

TEKS Citation	Description	Location	Assessment
(5)	**Matter and energy.** The student knows that interactions occur between matter and energy. The student is expected to:		
(A)	recognize that radiant energy from the Sun is transformed into chemical energy through the process of photosynthesis	Ec55	**Ec55** AQ4 & 5, **Ec56** AQ4
(B)	demonstrate and explain the cycling of matter within living systems such as in the decay of biomass in a compost bin	*Ec53,* Ec54	**Ec53** AQ2, **Ec54** AQ1 to AQ3
(C)	diagram the flow of energy through living systems, including food chains, food webs, and energy pyramids	*Ec48*, Ec50, Ec51, Ec52	**Ec50** AQ2, **EC51** AQ1
(6)	**Matter and energy.** The student knows that matter has physical and chemical properties and can undergo physical and chemical changes. The student is expected to:		
(A)	identify that organic compounds contain carbon and other elements such as hydrogen, oxygen, phosphorus, nitrogen, or sulfur	B7, *B8*	**B7** AQ8, **B8** AQ7
(B)	distinguish between physical and chemical changes in matter in the digestive system	B6, B7, B8	**B6** AQ2, **B7** AQ6 & AQ7, **B8** AQ1to AQ3
(C)	recognize how large molecules are broken down into smaller molecules such as carbohydrates can be broken down into sugars	B7, B8	**B7** *AQ1, AQ2,* AQ6, **B8** AQ2, AQ3
(7)	**Force, motion, and energy.** The student knows that there is a relationship among force, motion, and energy. The student is expected to:		
(A)	contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still	L82	**L82** AQ1 to AQ3
(B)	illustrate the transformation of energy within an organism such as the transfer from chemical energy to heat and thermal energy in digestion	B3, B8, B10, C25, Ec52, Ec53	**C25,** AQ2, **Ec53** AQ3, **Ec56** AQ5
(C)	demonstrate and illustrate forces that affect motion in everyday life such as emergence of seedlings, turgor pressure,	L84, L85, L86	**L84** AQ2, **L86** AQ3

TEKS Citation	Description	Location	Assessment
	and geotropism		
(8)	**Earth and space.** The student knows that natural events and human activity can impact Earth systems. The student is expected to:		
(A)	predict and describe how different types of catastrophic events impact ecosystems such as floods, hurricanes, or tornadoes	En68, En70, En76, En79	**En68** AQ5, **En70** AQ2, **En79** AQ1 & AQ2
(B)	analyze the effects of weathering, erosion, and deposition on the environment in ecoregions of Texas	En68, En70, En74, En77, En78, En79	**E74** AQ2 to 4, **En75** AQ1 to 4, **En77** AQ3 & AQ4, **En 78** AQ1, AQ3, AQ4, **En79** AQ1 & AQ3
(C)	model the effects of human activity on groundwater and surface water in a watershed	En71, En72, En73, En75, En76, En78	**En71** AQ4, **En72** AQ2, **En73** AQ5, **En76** AQ2, **En78** AQ2, AQ6, AQ7
(9)	**Earth and space.** The student knows components of our solar system. The student is expected to:		
(A)	analyze the characteristics of objects in our solar system that allow life to exist such as the proximity of the Sun, presence of water, and composition of the atmosphere	*L80*, L81, L87	***L80*** *AQ3*, **L81** AQ1 to 4, **L87** AQ2
(B)	identify the accommodations, considering the characteristics of our solar system, that enabled manned space exploration	L83	**L83** AQ3 & AQ4
(10)	**Organisms and environments.** The student knows that there is a relationship between organisms and the environment. The student is expected to:		
(A)	observe and describe how different environments, including microhabitats in schoolyards and biomes, support different varieties of organisms	*Ec44, Ec45*, Ec47, Ec48, Ec49, Ec54, Ec57	**Ec44** AQ7, **Ec47** AQ2, **Ec48** AQ3, **Ec54** AQ2 & AQ3
(B)	describe how biodiversity contributes to the sustainability of an ecosystem	Ec44, Ec48, Ec58	**Ec44** AQ5 to 7, **Ec48** AQ2

TEKS Citation	Description	Location	Assessment
(C)	observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds	Ec49, *Ec57*	**Ec49** AQ1 & AQ2
(11)	**Organisms and environments.** The student knows that populations and species demonstrate variation and inherit many of their unique traits through gradual processes over many generations. The student is expected to:		
(A)	examine organisms or their structures such as insects or leaves and use dichotomous keys for identification	Ec46, Ec50	**Ec46** AQ3 (or 4)
(B)	explain variation within a population or species by comparing external features, behaviors, or physiology of organisms that enhance their survival such as migration, hibernation, or storage of food in a bulb	Ev60, Ev61, Ev62, Ev63, *Ev65*	**Ev60** AQ1 to 3, **Ev62** AQ3 & AQ4, **Ev63** AQ1 & AQ2, ***Ev65*** *AQ2*
(C)	identify some changes in genetic traits that have occurred over several generations through natural selection and selective breeding such as the Galapagos Medium Ground Finch (*Geospiza fortis*) or domestic animals	Ev59, *Ev61*, Ev62, Ev63, *Ev66*, Ev67	***Ev61*** *AQ2 to 4*, **Ev64** AQ1 to 3, ***Ev65*** *AQ1 & AQ2*, ***Ev66*** *AQ1*, **Ev67** AQ2 & AQ3
(12)	**Organisms and environments**. The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function. The student is expected to:		
(A)	investigate and explain how internal structures of organisms have adaptations that allow specific functions such as gills in fish, hollow bones in birds, or xylem in plants	B5, B10, L85, L86	**B5** AQ4, **B10** AQ1 to 3, **L86** AQ4
(B)	identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems	B1, B2, B3, B4, B5, B6,B7,B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20	***B1*** *AQ1 & AQ2*, **B2** AQ5, **B3** AQ2 & AQ4, **B4** AQ1 & AQ3, **B5** AQ1, AQ2, AQ5, AQ6, **B6** AQ2 & AQ4, **B7** AQ7, **B8** AQ1 to 6, AQ8, **B9** AQ4, AQ6b, AQ7, **B10** AQ1, AQ3, AQ4, **B12** AQ3 &

TEKS Citation	Description	Location	Assessment
			AQ4, **B13** AQ2 & AQ3, **B15** AQ4, **B16** AQ4, **B18** AQ3 to AQ5, **B19** AQ4 & AQ5, **B20** AQ1 & AQ4, **B21** AQ1
(C)	recognize levels of organization in plants and animals, including cells, tissues, organs, organ systems, and organisms	B4, B5, B8, B10, B12, B16, C23, C24, C25, C27, C29, C30	**B5** AQ7, **B8** AQ8, **B10** AQ4, **B12** AQ8, **B16** AQ7, **C30** AQ1 & AQ4
(D)	differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole	C24, C25, C30, C32	**C24** AQ1, AQ4, AQ5, **C31** AQ3, **C32** AQ4 & AQ5
(E)	compare the functions of a cell to the functions of organisms such as waste removal	C25, C26, C30, C31, C32	**C25** AQ1, **C31** AQ4
(F)	recognize that according to cell theory all organisms are composed of cells and cells carry on similar functions such as extracting energy from food to sustain life	C23, C24, C25,C26, C27, C28, C29, C30, C31, C32	***C24*** *AQ2*, **C31** AQ2
(13)	**Organisms and environments.** The student knows that a living organism must be able to maintain balance in stable internal conditions in response to external and internal stimuli. The student is expected to:		
(A)	investigate how organisms respond to external stimuli found in the environment such as phototropism and fight or flight	B17, B18, B19, L5	***B17*** *AQ1*, **B19** AQ4, **L5** AQ1
(B)	describe and relate responses in organisms that may result from internal stimuli such as wilting in plants and fever or vomiting in animals that allow them to maintain balance	B15, B19, L65	**B15** AQ5**, B16 AQ6, B18** AQ5, **B19** AQ4, **L65** AQ6
(14)	**Organisms and environments.** The student knows that reproduction is a characteristic of living organisms and that the instructions for traits are governed in the genetic material. The		

TEKS Citation	Description	Location	Assessment
	student is expected to:		
(A)	define heredity as the passage of genetic instructions from one generation to the next generation	G35, G36, *G37, G38, G39, G40*	***G37*** *AQ2,* ***G38*** *AQ6*
(B)	compare the results of uniform or diverse offspring from sexual reproduction or asexual reproduction	B20, G36, *G37, G40*	**B20** AQ1**, G36** AQ2 & AQ3, ***G37*** *AQ3,* ***G40*** *AQ1, AQ2, AQ4,* ***G42*** *AQ1 to 4,* ***G43*** *AQ1*, AQ9
(C)	recognize that inherited traits of individuals are governed in the genetic material found in the genes within chromosomes in the nucleus	G41	**G41** AQ7

Grade 8

(EC = Ecosystems, FM = Force & motion, CH = Chemistry, EW = The Earth & Weather, CS = Cycles & Seasons, UN = The Universe)

TEKS Citation	Description	Location	Assessment
112.18(b) (1)	Scientific investigation and reasoning: The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:		
(A)	demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards	EC2, CH36, CH37, CH38, CH39, CH41, CH42	Safety Quiz, Science Laboratory Observation Checklist
(B)	practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.	CH36, CH37, CH38, CH39, CH41, CH42	Safety Quiz, Science Laboratory Observation Checklist
(2)	Scientific investigation and reasoning: The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:		
(A)	plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology	EC2, FM15, FM18, FM27, CH41, EW52, CS64, UN79, UN82	**EW52** Proc.
(B)	design and implement comparative and experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology	EC9, EW49	**EW49** Proc.
(C)	collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers	EC7, EC9, EC10, FM15, FM16, FM17, FM18, FM20, FM22, FM23,FM27, CH31, CH34, CH36, CH37, CH38, EW45,	**FM21** AQ2 & 3, **EW53** AQ2

TEKS Citation	Description	Location	Assessment
		EW47, EW48, EW49, EW52, EW53, EW54, EW55, EW61, CS64, CS68, UN79, UN82	
(D)	construct tables and graphs, using repeated trials and means, to organize data and identify patterns	EC2, EC7, EC8, EC9, FM15, FM16, FM17, FM18, FM19, FM23, FM24, FM27, CH30, CH31, CH32, CH33, CH34, CH36, CH37, CH38, EW45, EW46, EW49, *CS64,* CS67, CS68, UN80	**CH30** Proc., AQ3**,** **EC10** AQ1 & 4, **EW48** AQ1 & 2, **EW53** AQ2
(E)	analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends	EC8, EC11, FM19, FM22, FM28, CH30, CH31, CH32, CH33, CH37, EW45, EW46, EW47, CS63, CS67, CS68, CS69, CS71, CS74, CS76, UN81	**EC8** AQ3, **FM15** AQ2, **FM16** AQ1 & 5, **FM17** AQ1**,** **FM18** AQ1, **FM19** AQ1, **FM23** AQ2, **FM27** AQ1 & 2, **FM28** AQ2 TO 4, **CH30** AQ3, **EW45** AQ2, **EW48** AQ1 & 3, **EW49** AQ2 & 4, **EW53** AQ2, **EW55** AQ2, **UN80** AQ3, **CS63** AQ1, **CS64** AQ2 TO 5, **CS67** AQ1 TO 4, **CS68** AQ1 TO 7, **CS71** AQ1 TO 3, 5, **CS74** AQ1 TO 3
(3)	Scientific investigation and reasoning: The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:		

TEKS Citation	Description	Location	Assessment
(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	FM29, CH42, EW57, EW58, CS65, UN77, UN78, UN82, UN83, UN85	**FM29** AQ2, **EW57** AQ1, **UN77** AQ2 & 3
(B)	use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature	EC10, EC12, FM23, FM26, CH33, CH34, CH40, EW60, EW61, EW62, CS68, CS72, CS73	EC10 AQ 3; EC 12 AQ5
(C)	identify advantages and limitations of models such as size, scale, properties, and materials	EC12, FM23, FM26	**EC12** AQ5, **FM23** AQ1, **FM26** AQ1, **CH33** AQ6, **CH34** AQ7, **CS73** AQ4
(D)	relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content	FM21, *FM25,* CH32, EW44, EW50, EW57, EW58, CS66, UN83, UN84	**CH32** AQ6, **EW57** AQ2, **EW58** AQ3, **UN84** AQ5
(4)	**Science investigation and reasoning:** The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:		
(A)	use appropriate tools to collect, record, and analyze information, including lab journals/notebooks, beakers, meter sticks, graduated cylinders, anemometers, psychrometers, hot plates, test tubes, spring scales, balances, microscopes, thermometers, calculators, computers, spectroscopes, timing devices, and other equipment as needed to teach the curriculum	EC2, EC5, EC7, EC9, EC12, FM14, FM15, FM17, FM18, FM21, FM23, FM24, CH30, CH31, CH32, CH33, CH34, CH36, CH37, CH38, CH39, CH41, CH42, EW43, EW45, EW46, EW47, EW48, EW49, EW52, EW53, EW54, EW55, EW59, EW61, CS64,	Science Laboratory Skills Quiz

TEKS Citation	Description	Location	Assessment
		CS67, CS68, CS69, CS71, CS72, CS73, CS74, CS76, UN79	
(B)	use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher	EC7, CH36, CH37, CH38, CH39, CH41, CH42	Safety Quiz, Science Laboratory Observation Checklist
(5)	**Matter and energy.** The student knows that matter is composed of atoms and has chemical and physical properties. The student is expected to:		
(A)	describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud	CH32, CH33	**CH33** AQ5
(B)	identify that protons determine an element's identity and valence electrons determine its chemical properties, including reactivity	CH32, CH33, CH35	**CH32** AQ2 to 5, **CH33** AQ2 & *4*
(C)	interpret the arrangement of the Periodic Table, including groups and periods, to explain how properties are used to classify elements	CH31, CH32, CH33	**CH33** AQ1
(D)	recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts	CH34, CH35, CH40	**CH35** AQ1, 6b
(E)	investigate how evidence of chemical reactions indicate that new substances with different properties are formed	CH36, CH37, CH38, CH39, CH41, CH42	**CH36 AQ1**
(F)	recognize whether a chemical equation containing coefficients is balanced or not and how that relates to the law of conservation of mass	CH39, CH40	***CH39*** *AQ2,* ***CH40*** *AQ1 to 3*, **CH41** AQ4, **CH42** AQ2
(6)	**Force, motion, and energy.** The student knows that there is a relationship between force, motion, and energy. The student is expected to:		
(A)	demonstrate and calculate how unbalanced forces change the speed or	*FM21,* FM22, FM23	**FM22** AQ2 & 6

TEKS Citation	Description	Location	Assessment
	direction of an object's motion		
(B)	differentiate between speed, velocity, and acceleration	*FM15*, FM16	**FM16** AQ6 & 7
(C)	investigate and describe applications of Newton's law of inertia, law of force and acceleration, and law of action-reaction such as in vehicle restraints, sports activities, amusement park rides, Earth's tectonic activities, and rocket launches	*FM17,* FM18, FM19, FM20, FM21, FM25, FM29	**FM18** AQ4, **FM19** AQ3 & 4, **FM20** AQ3 & 4, **FM21** AQ1 TO 4, 6, **FM25** AQ1 & 2, **FM29** AQ1
(7)	**Earth and space.** The student knows the effects resulting from cyclical movements of the Sun, Earth, and Moon. The student is expected to:		
(A)	model and illustrate how the tilted Earth rotates on its axis, causing day and night, and revolves around the Sun causing changes in seasons	*CS64*, CS65, CS66, *CS67*, CS68, CS69, CS70, *CS75, CS76*	***CS64*** *AQ1 TO 7*, **CS65** AQ1 & 3, **CS66** AQ2 ***CS67*** *AQ4 TO 7*, **CS68** AQ1 TO 7, **CS69** AQ1 TO 6, **CS70** AQ1 TO 3, ***CS75*** *AQ3 & 4,* ***CS76*** *AQ1*
(B)	demonstrate and predict the sequence of events in the lunar cycle	CS71, CS72, CS73	**CS71** AQ1 TO 5, **CS72** AQ1 TO 5, **CS73** AQ1 TO 3, 5
(C)	relate the position of the Moon and Sun to their effect on ocean tide	CS74	**CS74** AQ2 & 3
(8)	**Earth and space.** The student knows characteristics of the universe. The student is expected to:		
(A)	describe components of the universe, including stars, nebulae, and galaxies, and use models such as the Hertzsprung-Russell diagram for classification	UN77, UN78, UN80, UN81	***UN78*** *AQ2,* **UN80** AQ1 to 4
(B)	recognize that the Sun is a medium-sized star near the edge of a disc-shaped galaxy of stars and that the Sun is many thousands of times closer to Earth than any other star	UN77, UN78, UN81	***UN78*** *AQ2*

TEKS Citation	Description	Location	Assessment
(C)	explore how different wavelengths of the electromagnetic spectrum such as light and radio waves are used to gain information about distances and properties of components in the universe	UN79, UN82, UN83, UN84	**UN79** AQ2 & 3, **UN84** AQ5
(D)	model and describe how light years are used to measure distances and sizes in the universe	UN77, UN78, UN83, UN84	**UN77** AQ1, **UN83** AQ1
(E)	research how scientific data are used as evidence to develop scientific theories to describe the origin of the universe	UN81, UN83, UN84, UN85	**UN83** AQ4, **UN84** AQ5
(9)	**Earth and space.** The student knows that natural events can impact Earth systems. The student is expected to:		
(A)	describe the historical development of evidence that supports plate tectonic theory	EW57, EW58	**EW57** AQ1 TO 3, **EW58** AQ3
(B)	relate plate tectonics to the formation of crustal features	EW56	**EW56** AQ1 & 3
(C)	interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering	EW55, *EW59*, EW60, EW61, EW62	**EW60** AQ1 TO 4, **EW61** AQ1 TO 4
(10)	**Earth and space.** The student knows that climatic interactions exist among Earth, ocean, and weather systems. The student is expected to:		
(A)	recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds and ocean currents	*EW47, EW48, EW49*, EW50, EW51	**EW50** AQ3
(B)	identify how global patterns of atmospheric movement influence local weather using weather maps that show high and low pressures and fronts	*EW53*, EW54	**EW54** AQ1 & 2
(C)	identify the role of the oceans in the formation of weather systems such as hurricanes	*EW43, EW49, EW50*, EW51	**EW49** AQ2, **EW52** AQ2
(11)	**Organisms and environments.** The student knows that interdependence occurs among living systems and the environment and that human activities can affect these systems. The student is		

TEKS Citation	Description	Location	Assessment
	expected to:		
(A)	describe producer/consumer, predator/prey, and parasite/host relationships as they occur in food webs within marine, freshwater, and terrestrial ecosystems	EC3, EC4,EC5, EC10	***EC3*** *AQ2*
(B)	investigate how organisms and populations in an ecosystem depend on and may compete for biotic and abiotic factors such as quantity of light, water, range of temperatures, or soil composition	EC1, EC2, *EC5,* EC9, EC11, EC12, EC13	***EC1*** *AQ2 & 3*, **EC2** AQ1, **EC6** AQ3, **EC8** AQ2, **EC9** AQ1 & 3, **EC10** AQ6, **EC12** AQ1 TO 4, **EC13** AQ1
(C)	explore how short- and long-term environmental changes affect organisms and traits in subsequent populations	EC1, EC5, EC6, EC7, EC8, EC11, EC12, EC13	**EC5** AQ3, **EC7** AQ3, **EC9** AQ3, **EC13** AQ3
(D)	recognize human dependence on ocean systems and explain how human activities such as runoff, artificial reefs, or use of resources have modified these systems	EC6	**EC6** AQ4 & 5