

Quarter					Instructional Shifts							
1	2	3	4		<i>Concepts and Skills</i>	Lab investigations	Close Read Strategy	Tier II Vocab	Text Dependent Questions	Evidence Based	Writing Element	Speaking Element
				SR	<i>Science Investigation and Reasoning</i>							
				SR.A	<i>The student conducts classroom and outdoor investigations following home and safety procedures and uses environmentally appropriate and ethical practices</i>							
				1	Demonstrate safe practices in the Texas Safety standards during classroom and outdoor investigations							
				2	Make informed choices in the use and conservation of natural resources by recycling or reusing materials such as paper, aluminum cans,							
				SR.B	<i>Students use scientific inquiry methods during laboratory and outdoor investigations</i>							
				1	Plan and implement descriptive investigations, including asking well-defined questions, making inferences, and selecting and using appropriate equipment of technology to answer his/her questions.							
				2	Collect and record data by observing and measuring, using the metric system, and using descriptive words, and numerals such as labeled drawings, writing, and concept maps							

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					3	Construct simple tables, charts, bar graphs and maps using tools and current technology to organize, examine, and evaluate data.							
					4	Analyze data and interpret patterns to construct reasonable explanations from data that can be observed and measured.							
					5	Perform repeated investigations to increase the reliability of results							
					6	Communicate valid, oral, and written results supported by data.							
						<i>Analyze, evaluate, and critique scientific explanation by using empirical evidence, logical reasons, and experimental and observation testing. Includes examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking</i>							
					1	Draw inferences and evaluate accuracy of services and product claims found in advertisements and labels such as for toys, food, and sunscreen							
					2	Represent the natural world using models such as rivers, stream tables, or fossils and identify their limitations including accuracy and size							

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				3	Connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists							
				4	Collect record and analyze information using tools:							
				4a	Calculators							
				4b	Microscopes							
				4c	Camera							
				4d	Computers							
				4e	Hand lenses							
				4f	Metric rulers							
				4g	Celsius thermometers							
				4h	Mirrors							
				4i	Triple beam balance							
				4j	Graduated cylinders							
				4k	Pan Balances							
				4l	Beakers							
				4m	Spring scales							
				4n	Hot plates							
				4o	Meter sticks							
				4p	Compasses							
				4q	Magnets							
				4r	Collecting nets							
				4s	Notebooks							
				4t	Timing devices, clocks and stopwatches							
				4u	Materials to support observations of habitats of organisms such as terrariums and aquariums							
				5	Use Safety equipment as appropriate, including safety goggles and gloves							

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					ME	<i>Matter and Energy</i>						
				1	Measure, compare, and contrast physical properties of matter, including size, mass, volume, states (solid, liquid, gas) temperature, magnetism and the ability to sink or float.							
				2	Predict the changes caused by heating and cooling such as ice becoming liquid water and condensation forming on the outside of a glass of ice water.							
				3	Compare and contrast a variety of mixtures and solutions such as rocks in sand, sand in water, or sugar in water.							
				4	Construct using evidence an explanation relating the speed of an object to the energy of that object (PS3-A).							
				5	Observe and discuss that energy is present whenever there are moving objects, sound, light or heat (PS3-B).							
				6	Provide evidence that energy can be transferred from place to place by moving objects, sound, light, heat and electric currents and by conductors and insulators (PS3-B).							
				7	Investigate and predict how colliding objects transfer energy to the surrounding air, heating it and causing sound (PS1-B).							

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					8	Construct using evidence an explanation showing that the energy of motion can create electrical currents and explore electromagnetic fields (PS1-B).						
					9	Ask questions and predict outcomes about the changes in energy that occur when objects collide, including the concepts of gravity, friction and magnetism (PS3-C).						
					10	Apply scientific ideas to design, test and refine a device that converts energy from one form to another (PS3-D).						
					11	Discuss and explore how the expression "producing energy" refers to the conversion of stored energy into a desired form for practical use (PS3-D).						
					FME	<i>Force, Motion and Energy</i>						
					1	Differentiate among forms of energy, including mechanical, sound, electrical, light, and heat/thermal.						
					2	Differentiate between conductors and insulators						
					3	Demonstrate that electricity travels in a closed path, creating an electrical circuit and explore an electromagnetic field						

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				4	Design an experiment to test the effect of force on an object such as a push or a pull, gravity, friction, or magnetism							
				ES	<i>Earth and Space</i>							
				1	Identify evidence from patterns in rock formations and fossils in rock layers or changes in a landscape over time to support an explanation for changes in a landscape over time (ESS1-1).							
				2	Describe and illustrate the continuous movement of water above and on the surface of the Earth through the water cycle, and explain the role of the sun as a major source of energy in this process.							
				3	Examine and identify local, regional and global patterns of rock formation to reveal changes over time due to Earth's forces, such as earthquakes (ESS1-C).							
				4	Collect and analyze data to identify sequences and predict patterns of change in shadows, in the tides, seasons and the observable appearance of the moon over time.							
				5	Examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants.							

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				6	Observe and identify slow changes to Earth's surface caused by weathering, erosion, and deposition of from water, wind, ice, vegetation and gravity.							
				7	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 (ESS3-A).							
				8	Measure and record changes in weather and make predictions using weather maps, weather symbols.							
				9	Analyze and interpret data from maps to describe patterns of Earth's features (ESS2-B).							
				10	Draw inferences and evaluate the accuracy of services and product claims found in advertisements and labels, such as for toys, food and sunscreen.							
				W	<i>Waves</i>							
				1	Understand waves are patterns of motion in water made by disturbing the surface (PS4-A).							
				2	Show using examples or analogies that waves in deep water go up and down in place, changing direction of motion only when hitting a beach (PS4-A).							

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					3	Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move (PS4-A).							
					4	Develop a model to describe that light reflecting from objects and entering the eyes allows objects to be seen (PS4-B).							
					5	Discuss and explore how digitized information from computers or cell phones can be transmitted over long distances, converting from digitized form to voice and vice versa (PS4-C).							
					6	Observe and discuss how similarities and differences in patterns can be used to sort, classify and analyze simple rates of change to natural phenomena and/or designed products (CC1).							
					OE	<i>Organisms and Environments</i>							
					1	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 sources of energy in this process.							

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				8	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior and reproduction (LS1-A).							
				9	Use a model to describe that animals receive different types of information through their senses, process the information in their brains and respond to the information in different ways (LS1-B).							

















































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