

PUSD Science District Instructional Guides (Date Updated: 9/13/19)

Grade Level:4th		Time: 9 Weeks			
Unit Title:Physical Science		Essential Questions: What is the relationship between magnetism and energy?			
		<u>Phenomena: Static Electricity</u>			
Standards	Cross Cutting Concepts	Objectives (I Can)	Key Vocabulary	Resources (Activities/Lessons/Experiments)	Assessments
<p>4.P4U1.1 Develop and use a model to demonstrate how a system transfers energy from one object to another even when the objects are not touching.</p> <p>4.P4.U1.2 Develop and use a model that explains how energy is moved from place to place through electric currents</p> <p>4.P2U1.3 Develop and use a model to demonstrate magnetic forces.</p> <p>4.P4U3.4 Engage in argument from evidence on the use and impact of renewable and nonrenewable resources to generate electricity.</p>	<p>Cause and Effect Systems and System Models Energy and Matter</p>	<ul style="list-style-type: none"> ● I can create and explain how energy is moved from place to place, using electric currents. I can investigate characteristics of a magnet (e.g., opposite poles attract, like poles repel, the force between two magnet poles, depends on the distance between them). □ I can state cause and effect relationships between magnets and circuitry and scientific notation. I can differentiate renewable resources from nonrenewable resources □ I can describe various ways resources can be used to make electricity. (i.e. solar energy wind energy, and water) □ I can analyze the effect that limited resources (e.g., natural gas, minerals) may have on an environment □ I can describe ways in which resources can be conserved (e.g., by reducing, reusing, recycling, finding substitutes 	<p>Energy Collide Energy Transfer Radiate Electric Currents Sound Light Heat Conversion Electricity Battery Collide Produce Absorb Motion Transform Turbine Generator Photosynthesis</p>	<p>Activities</p>	<p>Assessments</p>

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Grade Level:4th		Time: 9 Weeks			
Unit Title:Life Science		Essential Questions: How do organisms live, grow, survive, and respond to their environment and what are the effects of these interactions?			
		Phenomena:	Smart Crow	Tree Hopper Ant	Phenomena song
Standards	Cross Cutting Concepts	Objectives (I Can)	Key Vocabulary	Resources (Activities/Lessons/Experiments)	Assessments
4.L4U1.11 Analyze and interpret environmental data to demonstrate that species either adapt and survive or go extinct over time.	Patterns Cause and Effect Systems and System Models Energy and Matter Stability and Change	<input type="checkbox"/> I can describe and list animal or plant adaptations that allow it to survive. <input type="checkbox"/> I can recognize the characteristics of a population are inherited traits that are favorable in a particular environment. <input type="checkbox"/> I can describe different types of ecosystem and or biomes. <input type="checkbox"/> I can differentiate between invertebrates and vertebrates. <input type="checkbox"/> I can categories vertebrates like amphibians, reptiles, birds, mammals, etc. <input type="checkbox"/> I can categories invertebrates like insects, arachnids, crustaceans, etc.	Temperatute Resources Organisms Characteristics Physical Characteristics Behavioral Characteristics Evidence Survive Reproduce Fossils Habitat Environment Beneficial Harmful	Activities	Assessments

<p>U1: Scientists explain phenomena using evidence obtained from observations and or scientific investigations. Evidence may lead to developing models and or theories to make sense of phenomena. As new evidence is discovered, models and theories can be revised.</p> <p>U2: The knowledge produced by science is used in engineering and technologies to solve problems and/or create products.</p> <p>U3: Applications of science often have both positive and negative ethical, social, economic, and/or political implications</p>					
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Grade Level:4th		Time: 9 Weeks			
Unit Title: Earth and Space		Essential Questions: How does the surface of our Earth change?			
		Phenomena: Columnar Basalt			
Standards	Cross Cutting Concepts	Objectives (I Can)	Key Vocabulary	Resources (Activities/Lessons/Experiments)	Assessments
<p>4.E1U1.5 Use models to explain seismic waves and their effect on the Earth</p> <p>4.E1U1.6 Plan and carry out an investigation to explore and explain the interactions between Earth's major systems and the impact on Earth's surface materials and processes</p> <p>4.E1U1.7 Develop and/or revise a model using various rock types, fossil location, and landforms to show evidence that Earth's surface has changed over time</p> <p>4.E1U1.8 Collect, analyze, and interpret data to explain weather and climate patterns.</p> <p>4.E1U3.9 Construct and support an evidence-based argument about the availability of water and its impact on life.</p> <p>4.E1U2.10 Define problem(s) and design solution(s) to minimize the effects of natural hazards.</p>	<p>Cause and Effect Systems and System Models Energy and Matter Stability and Change</p>	<p><input type="checkbox"/> I can explain what causes weathering.</p> <p><input type="checkbox"/> I can explain the earth's processes that cause erosion.</p> <p><input type="checkbox"/> I can describe how currents and wind cause erosion and land changes.</p> <p><input type="checkbox"/> I can describe the role that water places in the following process that alter the Earth's surface features: erosions, deposition, and weathering.</p> <p>I can identify what a geosphere is and the components include solid and molten rock, soil, and sediments.</p> <p><input type="checkbox"/> I can identify what a hydrosphere is and the components include water and ice.</p> <p><input type="checkbox"/> I can identify what an atmosphere is and the component is air.</p> <p><input type="checkbox"/> I can a biosphere and the components include living things (animals, humans, plants)</p> <p><input type="checkbox"/> I can identify the 6 biomes taiga, tundra, desert, deciduous forest, tropical forest and grassland and the Earth's major system included in each.</p> <p><input type="checkbox"/> I can identify my impact on each of the major systems while structured within a selected biome.</p> <p><input type="checkbox"/> I can identify the structure of a plant (e.g., roots, stems, leaves flowers)</p> <p><input type="checkbox"/> I can compare plants and animal structures for their different functions.</p>	<p>wavelength earthquake seismic amplitude Earth's crust geosphere atmosphere hydrosphere biosphere ocean landforms weather climate erosion sediment rock formations fossils weathering deposition solid rock molton rock soil taiga tundra desert deciduou forest</p>	<p>Activities</p>	<p>Assessments</p>

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Grade Level:4th		Time: 9 Weeks			
Unit Title: Review and Assessment Prep		Essential Questions:			
		Phenomena:			
Standards	Cross Cutting Concepts	Objectives (I Can)	Key Vocabulary	Resources (Activities/Lessons/Experiments)	Assessments
				Activities	