

PUSD Science District Instructional Guides (Date Updated: 9/2019)

Grade Level: 2nd		Time: Quarter 1				
Unit Title: Scientific Tools, Earth and Space, Matter		Essential Questions: What tools do scientist use to explore the world? Why can we only see part of the moon sometimes?				
Standards		Cross Cutting Concepts	Objectives (I Can)	Key Vocabulary	Resources (Activities/Lessons/Experiments)	Assessments
<i>Unit 1 Scientific Tools: Core Idea: P1: All matter in the Universe is made of very small particles.</i>		Scale, Proportion, and Quantity	* I can explain that the universe is made of small particles.	Scientific Tools: microscope, telescope	Resource List	
<p>Unit 2: Earth and Space Standards: <i>2.E2U1.8 Observe and explain the Sun's position at different times during a twenty-four-hour period and changes in the apparent shape of the Moon from one night to another. There are patterns in the position of the Sun seen at different times of the day and in the shape of the Moon from one night to another.</i></p>		E: Patterns; Cause and Effect; Systems and System Models; Stability and Change.	<ul style="list-style-type: none"> * I can explain how Earth's rotation creates day and night. * I can give facts about the Sun, Moon, and Earth. 	Sun, constellation, Earth and Moon, seasons, orbit, rotation, Moon phases; full, new, crescent, half, Optional: robots (Mars Rover),		
<p>Unit 3: Matter Standards: 2.P1U1.1 Plan and carry out an investigation to determine that matter has mass, takes up space, and is recognized by its observable properties; use the collected evidence to develop and support an explanation. All the 'stuff' encountered in everyday life, including air, water and different kinds of solid substances, is called matter because it has mass, and therefore weight on Earth, and takes up space. Different materials are recognizable by their properties, some of which are used to classify them as being in the solid, liquid or gas state. Different kinds of matter exist (e. g., wood, metal, water), and many of them can be either solid or liquid, depending on temperature. 2.P1U1.2 Plan and carry out investigations to gather evidence to support an explanation on how heating or cooling can cause a phase change in matter.</p>		P: Cause and Effect; Scale; Proportion, and Quantity; System and System Models; Energy and Matter; Stability and Change.	<ul style="list-style-type: none"> * I can explain the three states of matter are solid, liquid, and gas. * I can explain the different properties and characteristics of the different types of matter. * I can investigate and determine that matter has mass. * I can determine that matter takes up different amounts of space depending on the state it is in. * I can plan and carry out an investigations to prove how heating and cooling certain materials can change the state of matter. 	Matter, liquid, solid, gas, volume, mass, particle		

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Grade Level: 2nd		Time: Quarter 2			
Unit Title: Plant and Water Cycle		Essential Questions: How do seeds become plants? What do plants need to survive? Where do clouds come from?			
Phenomena:		Seeds	Clouds		
Standards	Cross Cutting Concepts	Objectives (I Can)	Key Vocabulary	Resources (Activities/Lessons/Experiments)	Assessments
Unit 1 Plant Life Cycle Standards: L2: Organisms require a supply of energy and materials for which they often depend on, or compete with, other organisms. 2.L.2U1.9 Obtain, analyze, and communicate evidence that	L: Cause and Effect; System and System Models; Energy and Matter; Structure and Function; Stability and Change.	* I can understand that all living things need food as their source of energy, as well as air, water, and certain temperature conditions. * I can understand that plants	*Plant life cycle: seed, seedling, plant. Plant needs: sun, water, air temperature etc.	Resource List	
Unit 2 Water Cycle Standards 2.E1U2.6 Analyze patterns in weather conditions of various regions of the world and design, test, and refine solutions to protect humans from severe weather conditions. 2.P1U1.2 Plan and carry out investigations to gather evidence to support an explanation on how heating or cooling can cause a phase change in matter.	E: Patterns,Cause and Effect; Scale; Proportion and Quanity; Systems and System Models; stability and change. P: Patterns,Cause and Effect; Scale; Proportion and Quanity; Systems and System Models; Energy and Matter; stability and change.	*I can plan and carry out an investigations to prove how heating and cooling certain materials can change the state of matter.	Water cycle: Percipitation, Evaporation, Condensation		

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Grade Level: 2nd		Time: Quarter 3			
Unit Title: Clouds, Weather, Weathering and Erosion		Essential Questions: Why do clouds look so different? Why does weather scare us and how can we stay safe? What forms canyons?			
		Phenomena:	Seeds	Clouds	Canyons
Standards	Cross Cutting Concepts	Objectives (I Can)	Key Vocabulary	Resources (Activities/Lessons/Experiments)	Assessments
<p>Unit 1 Clouds Standards: 2.E1U1.5 Develop and use models to represent that water can exist in different states and is found in oceans, glaciers, lakes, rivers, ponds, and the atmosphere.</p>	<p>E: Patterns; Cause and Effect; Scale, Proportion, and Quantity; Systems and System Models; Stability and Change.</p>	<p>*I can understand that water is found in oceans, rivers, lakes, and ponds.</p>	<p>Clouds: cirrus, cumulus, stratus, cumulonimbus, atmosphere, glacier, ocean, lake, river, pond</p>	<p>Resource List</p>	
<p>Unit 2: Weather Standards: 2.E1U2.6 Analyze patterns in weather conditions of various regions of the world and design, test, and refine solutions to protect humans from severe weather conditions.</p>	<p>E: Patterns; Cause and Effect; Scale, Proportion, and Quantity; System and System Models; Structure and Function; Stability and Change.</p>	<p>* I can analyze patterns in weather over different geographic locations. * I can describe and record the weather. * I can measure weather conditions using certain tools provided. * I can explain how severe weather conditions can be detrimental to humans. * I can understand the different properties of natural disasters and how they occur. * I can explain steps to take in order to survive a natural disaster.</p>	<p>Weather: precipitation, condensation, evaporation,</p>		
<p>Unit 3: Weathering and Erosion Standards: E1: The composition of the Earth and its atmosphere and the natural and human processes occurring within them shape the Earth's surface and its climate. 2.E1U1.4 Observe and investigate how wind and water change the shape of the land resulting in a variety of landforms. 2.E1U1.5 Develop and use models to represent that water can exist in different states and is found in oceans, glaciers, lakes, rivers, ponds, and the atmosphere.</p>	<p>E: Patterns; Cause and Effect; Scale, Proportion, and Quantity; Systems and System Models; Stability and Change.</p>	<p>*I can describe the properties of the different landforms. * I can explain how water can change the shape of land.</p>	<p>Weathering and Erosion: sediment (weathering breaks, erosion takes it) Landforms</p>		

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Grade Level: 2nd		Time: Quarter 4					
Unit Title: Pollution, Recycling, and Energy Sources		Essential Questions: How can we protect and persevere our planet? Can we reduce, reuse, and recycle? How can we use energy?					
Phenomena:		Pollution and Recycling	Solar Power	Wind Power	Water Power		
Standards	Cross Cutting Concepts	Objectives (I Can)	Key Vocabulary	Resources (Activities/Lessons/Experiments)		Assessments	
Unit 1 Pollution and Recycling Standards: <i>2.E1U3.7 Construct an argument from evidence regarding positive and negative changes in water and land systems that impact humans and the environment.</i>	E: Patterns; Cause and Effect; Scale, Proportion and Quantity; Systems and System Models; Structure and Function; Stability and Change.	*I can find evidence for the positive and negative effects of how water and land systems impact humans and the environment. * I can construct an argument	Pollution: reduce, reuse, recycle. Waste	Resource Lists			
Unit 2: Energy Standards: <i>2.L2U1.10 Develop a model representing how life on Earth depends on energy from the Sun and energy from other organisms.</i>	L: Cause and Effect; Systems and System Models; Energy and Matter; Structure and Function; Stability and Change.	*I can find evidence for the positive and negative effects of how water and land systems impact humans and the environment. * I can construct an argument based on the positive and negative effects water and land systems impact humans and the environment.	Energy, Alternative energy sources (sun, wind, water).				