

Options EHS Earth and Space Science-OR		Scope and Sequence
Unit	Lesson	Objectives
<b>Earth and Its Organisms</b>		
Spheres of Earth		
		Distinguish the four major parts of the Earth system.
		Explain how Earth's four spheres interact.
Cycles of Matter		
		Examine how carbon cycles through an ecosystem.
		Analyze the importance of the nitrogen cycle.
		Identify the processes involved in the water cycle.
Populations and the Environment		
		Identify the levels of organization within an ecosystem.
		Differentiate biotic and abiotic factors.
		Identify ways in which organisms compete for resources.
Unit Test		
<b>Dynamic Earth</b>		
Minerals		
		Describe the properties used to identify minerals.
		Explain how minerals are formed.
		Identify uses of minerals.
Rocks and the Rock Cycle		
		Describe the properties used to identify rocks.
		Identify the three main groups of rocks.
		Identify the ways in which rocks change as they move through the rock cycle.

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	Earth's Interior	<p>Explain how geologists learn about Earth's interior.</p> <p>Compare and contrast the three main layers of Earth.</p>
	Continental Drift	<p>Explain continental drift.</p> <p>Describe evidence that supports continental drift.</p>
	Plate Tectonics	<p>Explain the theory of plate tectonics.</p> <p>Identify the major tectonic plates.</p> <p>Distinguish the three types of plate boundaries.</p> <p>Relate plate tectonics to the formation of landforms.</p>
	Characteristics of the Seafloor	<p>Describe the process of seafloor spreading.</p> <p>Describe evidence that supports seafloor spreading.</p> <p>Explain what occurs at deep-ocean trenches.</p>
	Earthquakes	<p>Describe the causes of an earthquake.</p> <p>Explain how the energy of an earthquake travels.</p> <p>Describe methods used to measure earthquakes.</p> <p>Explain how geologists locate the epicenter of an earthquake.</p>
	Volcanoes	<p>Identify the reasons why Earth's volcanic regions are located in certain areas.</p>

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		Explain what happens when a volcano erupts.
		Distinguish the two types of volcanic eruption.
		Describe the three stages of volcanic activity.
		Explain how volcanoes create various landforms.
	Lab: Plate Boundaries and Movement	
		Differentiate between the major types of plate boundaries.
		Describe the role of mantle convection in plate movement.
		Examine how plate movements cause changes in Earth's surface.
		Compare and contrast the plate movements that cause earthquakes and volcanic eruptions.
	Unit Test	
	<b>Earth's Surface</b>	
	Weathering and Soil	
		Distinguish between mechanical and chemical weathering.
		Identify factors that affect the rate of weathering.
		Describe the characteristics of soil.
		Explain how soil is formed.
		Classify different types of soil.
	Erosion and Deposition	
		Describe erosion and deposition.
		Differentiate types of mass movement.
	Water and Wind Erosion	
		Identify features that are formed by water erosion and deposition.

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		Identify causes of groundwater erosion.
		Explain how glaciers and waves cause erosion and deposition.
		Describe the effects of wind erosion and deposition.
	Lab: Modeling Water Erosion	
		Identify factors that affect erosion and deposition by rivers.
		Model stream processes and observe stream behavior.
	Models of Earth	
		Explain how maps and globes represent Earth's surface.
		Describe the reference lines that are used to locate points on Earth.
		Identify the three major map projections.
		Explain how computers are used to map Earth's surface.
	Topographic Maps	
		Explain how elevation, relief, and slope are shown on topographic maps.
		Interpret topographic maps.
		Describe uses of topographic maps.
	Unit Test	
	<b>Earth's Waters</b>	
	Surface Water	
		Identify sources of fresh water.
		Identify the components of a river system.
		Identify the characteristics of ponds and lakes.
		Distinguish the three types of wetlands.

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	Groundwater	
		Explain how water moves underground.
		Differentiate major groundwater zones, including the saturated and unsaturated zones and the water table.
		Explain how groundwater is obtained.
	Unit Test	
	<b>Earth's Atmosphere</b>	
	Structure and Composition of the Atmosphere	
		Describe the composition of Earth's atmosphere.
		Describe the importance of the atmosphere to living things.
		Identify properties of air, including pressure and density.
		Explain how altitude affects air pressure and density.
		Distinguish the four main layers of the atmosphere.
	Lab: Energy Transfer	
		Differentiate between the processes of conduction, convection, and radiation.
		Explain the role of heat transfer processes in the distribution of energy on Earth.
	Winds	
		Examine the processes that cause wind.
		Differentiate between local and global winds.
		Locate the major global wind belts.
	Atmospheric Moisture and Precipitation	
		Describe humidity and how it is measured.

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		Explain how clouds form.
		Distinguish the three main types of clouds.
		Identify common types of precipitation.
	Unit Test	
<b>Weather and Climate</b>		
	Air Masses and Fronts	
		Identify the major types of air masses.
		Explain how air masses move.
		Differentiate the four main types of fronts.
	Storms	
		Explain how various storms form.
		Describe the effects of various storms on humans and the environment.
		Identify measures that can be taken to stay safe in a storm.
	Weather Forecasting	
		Describe basic elements of meteorology.
		Describe what information can be gained from a weather map.
	Lab: Weather Patterns	
		Identify weather systems and fronts utilizing a weather map.
		Examine the influence of atmospheric conditions on weather patterns.
		Utilize weather station data to analyze weather patterns.
	Factors That Affect Climate	
		Explain what causes seasons.

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		Explain how various factors affect weather and climate.
	Earth's Climate History	
		Explain how scientists study ancient climates.
		Identify factors that can cause long-term climate change.
	Climate Change	
		Identify events that can cause short-term and global climate change.
		Explain how human, biologic, and geologic activities can influence climate.
	Unit Test	
<b>Beyond Earth</b>		
	The Solar System	
		Compare the geocentric and heliocentric models of the solar system.
		Explain how Copernicus, Galileo, and Kepler contributed to the acceptance of the heliocentric model.
		Identify objects that make up the solar system.
	Stars	
		Identify the physical properties of stars.
		Explain how stars are classified.
		Explain how a star forms.
		Explain what happens as a star runs out of fuel.
	Star Systems and Galaxies	
		Describe star systems.
		Distinguish the major types of galaxies.
	The Expanding Universe	

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		Describe the big bang theory.
		Explain how the solar system formed.
		Describe what astronomers predict about the future of the universe.
<b>Cumulative Exam</b>		
	Cumulative Exam Review	
	Cumulative Exam	