

Options EHS Earth and Space Science-OR		Scope and Sequence
Unit	Lesson	Objectives
Earth and Its Organisms		
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		
Dynamic Earth		
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.

Unit Lesson**Objectives**

Earth's Interior

Explain how geologists learn about Earth's interior.

Compare and contrast the three main layers of Earth.

Continental Drift

Explain continental drift.

Describe evidence that supports continental drift.

Plate Tectonics

Explain the theory of plate tectonics.

Identify the major tectonic plates.

Distinguish the three types of plate boundaries.

Relate plate tectonics to the formation of landforms.

Characteristics of the Seafloor

Describe the process of seafloor spreading.

Describe evidence that supports seafloor spreading.

Explain what occurs at deep-ocean trenches.

Earthquakes

Describe the causes of an earthquake.

Explain how the energy of an earthquake travels.

Describe methods used to measure earthquakes.

Explain how geologists locate the epicenter of an earthquake.

Volcanoes

Identify the reasons why Earth's volcanic regions are located in certain areas.

Unit Lesson**Objectives**

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

Earth's Surface

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.

Unit Lesson**Objectives**

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

Earth's Waters

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.

Unit Lesson**Objectives**

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

Earth's Atmosphere

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.

Unit Lesson**Objectives**

Explain how clouds form.

Distinguish the three main types of clouds.

Identify common types of precipitation.

Unit Test

Weather and Climate

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.

Options EHS Earth and Space Science-OR**Scope and Sequence****Unit Lesson****Objectives**

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

Beyond Earth

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

Unit Lesson

Objectives

Describe the big bang theory.

Explain how the solar system formed.

Describe what astronomers predict about the future of the universe.

Cumulative Exam

Cumulative Exam Review

Cumulative Exam