

Options EHS Environmental Science A 2020		Scope and Sequence
Unit	Lesson	Objectives
Scientific Inquiry and Analysis		
Scientific Inquiry		Describe the steps involved in scientific inquiry.
		Differentiate between an observation and an inference.
		Explain the relationship between variables and controls in an experiment.
		Compare and contrast scientific theories and scientific laws.
Laboratory Tools and Safety		Describe the use of various common laboratory tools.
		Differentiate between light, dissecting, and electron microscopes.
		Identify safety equipment found in a science lab.
		Explain the importance of following common lab rules and procedures.
Scientific Measurement		Explain the purpose of utilizing the metric system in scientific measurement.
		Identify the basic SI units utilized in scientific measurement.
		Calculate values utilizing the metric conversion process.
		Describe the use of significant figures and rounding in scientific measurement.
Scientific Models		Explain the purpose of scientific models.
		Identify limitations of scientific models.
		Describe three types of scientific models.
Critical Thinking in Science		Identify components of critical thinking.

Unit Lesson**Objectives**

Explain the importance of critical thinking to science.

Evaluate three everyday uses of critical thinking.

Topic Test

Earth's Systems

Skills Lesson: Modeling Systems and Cycles

Identify a system or cycle to be modeled.

Determine the main parts or processes of the system or cycle.

Organize the parts or processes sequentially.

Model the main parts or processes of the system or cycle.

Systems of the Biosphere

Describe Earth's systems in terms of energy, matter, time, and space.

Explain the interactions between Earth's systems.

Patterns in Systems

Describe various patterns found in the Earth system.

Identify methods of measuring constancy and change in a system.

Topic Test

Earth's Cycles

The Cycles of Matter

Describe various cycles of matter that take place on Earth.

Evaluate the role played by cycles in sustaining life.

Explain the change in energy that occurs between each cycle in an ecosystem.

The Water Cycle

Unit Lesson**Objectives**

Describe the steps of the water cycle.

Explain the relationship between living organisms and the water cycle.

Identify possible sources of water contamination.

Effects of Cycles on Ecosystems

Explain how fluctuations in abiotic cycles influence populations.

Describe the movement of carbon compounds through a food web.

Describe the effects of abiotic cycles on local ecosystems.

Global Connection: Recycling on Earth

Compare human recycling techniques to similar cycles in nature.

Topic Test

The Air

Skills Lesson: Evaluating Explanations

Identify a given explanation for an event or process.

Research data relating to the explanation.

Categorize researched information as being factual or biased.

Evaluate the given explanation based on researched data.

Atmospheric Pollution

Overview the composition and function of each layer of the atmosphere.

Identify various common atmospheric pollutants.

Differentiate between primary and secondary pollutants.

Examine the effects of pollution on health.

Skills used: evaluate the validity of an explanation

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	Ozone	<p>Explain how the ozone layer is formed.</p> <p>Analyze the importance of the ozone layer in sustaining life.</p> <p>Compare and contrast various factors that cause ozone depletion.</p> <p>Relate fluctuations in ozone to human health and the environment.</p>
	Air Quality	<p>Identify various causes of air pollution.</p> <p>Explain the impact of air pollution on the environment.</p> <p>Assess the methods that can be utilized to improve air quality.</p> <p>Propose alternative methods of improving air quality.</p> <p>Skills used: compare and contrast support and opposition</p>
	Topic Test	
	Climate	
	Succession	<p>Identify various causes of succession in ecosystems.</p> <p>Differentiate between primary and secondary succession in ecosystems.</p> <p>Explain the importance of succession in maintaining ecosystems.</p>
	Climate and Change in Ecosystems	<p>Identify various effects of climate changes on an ecosystem.</p> <p>Describe environmental factors that can cause changes in ecosystems.</p> <p>Compare and contrast the benefits and disadvantages of natural change to ecosystems.</p>
	Global Change	

Unit Lesson**Objectives**

Predict future changes in the global climate.

Assess current theories regarding global climate change.

Analyze environment changes and their connection to global warming.

Skills used: making predictions based on data

A History of Global Climate Change

Compare current and past global climate trends.

Explain how long-term global climate shifts impact Earth's ecosystems.

Describe the effects of greenhouse gases on the atmosphere.

Analyze various theories related to global warming.

Skills used: compare and contrast support and opposition

Global Connection: Algal Blooms

Connect the formation of algal blooms to climate change.

Topic Test

Shaping Earth

Skills Lesson: Plotting Trends and Patterns

Record observations of an event or process.

Categorize recorded observations based on similarities and differences.

Interpret trends and patterns within the recorded data.

Life and Earth's Crust

Describe the composition of each layer of the Earth.

Explain the structure and function of the Earth's crust.

Evaluate the interdependence of Earth's crust and its organisms.

Unit Lesson**Objectives**

Skills used: create graph, map, chart

Plate Tectonics

Explain the theory of plate tectonics.

Relate the movement of the continents to changes in weather patterns.

Describe the impact of continental shifting on local environments.

Skills used: create graph, map, chart

Weathering and Erosion

Compare and contrast weathering and erosion.

Distinguish between chemical and physical weathering.

Describe the effects of natural erosion on the environment.

Explain the impact of artificial erosion on the environment.

Skills used: create graph, map, chart

Topic Test

Cumulative Test Review**Cumulative Exam**