

Unit	Topic	Lesson	Lesson Objectives
<b>Introduction to AP* Environmental Science</b>			
<b>Topic 1: Navigating the Course</b>			
<b>The AP* Environmental Science Exam</b>			
Identify components of the AP* Environmental Science course			
<b>Resources to Use</b>			
Utilize the resources of the *AP Environmental Science course			
<b>Unit 1: Scientific Method &amp; Introduction to Environmental Science</b>			
<b>Topic 1: Scientific Method</b>			
<b>Scientific Inquiry</b>			
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			
<b>Laboratory Tools and Safety</b>			
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			
<b>Scientific Measurement</b>			
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			
<b>Critical Thinking in Science</b>			
Identify components of critical thinking			
Explain the importance of critical thinking to science			
Evaluate three everyday uses of critical thinking			
<b>Environmental Scientists and Ecologists</b>			
Summarize the work of famous environmental scientists of the past			
Examine the contributions of environmental scientists to today's environment			
Skills Used: Making Predictions, Identifying Trends			

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<b>Careers in Environmental Science</b>			
Describe the job of an environmental scientist Explore additional careers in environmental science Discuss possible future careers and fields in environmental science Skills Used: Identifying Trends, Making Predictions, Compare and Contrast, Interpreting Observations			
<b>Topic 2: Introduction to Environmental Science</b>			
<b>The Study of Environmental Science</b>			
Define the components of environmental science Describe the interdependence of organisms in the environment Discuss human impacts on the Earth			
Skills Used: Making Logical Connections, Understanding Cause and Effect, Interpreting Observations			
<b>Governments and Business</b>			
Illustrate how conservation efforts have positively impacted ecosystems Compare the effects of government sanctioned activities on ecosystems Assess the impact of government and business on energy efficiency Skills used: Making logical connections, interpreting observations, supporting claims, making predictions, compare and contrast			
<b>Informed Policy</b>			
Describe the influence that scientific knowledge has on society Identify contributing factors to environmental policy decisions			
Evaluate the benefits of monitoring environmental parameters when making policy regarding resource use Skills used: Compare and contrast, making logical connections, supporting claims, understanding cause and effect			
<b>Impact of Policy</b>			
Assess the potential environmental consequences of policies that address social problems Evaluate the effects of policies on global and local ecosystems Propose possible effects of policies regarding sustainable land use Skills used: Supporting claims, plotting trends, making predictions, interpreting observations, compare and contrast			

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		<b>Milestones and Turning Points</b>	<p>Illustrate the impact of major milestones in environmental science</p> <p>Predict possible milestones in environmental policy</p> <p>Describe the efforts of various countries to reduce resource and ecological depletion</p> <p>Skills used: Making valid criticisms, understanding cause and effect, researching with technology, making predictions, identifying trends</p>
<b>Unit 2: Life on Earth - Ecology and Habitats</b>			
	<b>Topic 1: Introduction to Ecology</b>		
		<b>Ecology 101</b>	<p>Describe the levels of organization in the biosphere</p> <p>Identify the major biomes found on Earth</p> <p>Compare and contrast major ecosystems found on Earth</p> <p>Skills Used: Create a Flow Chart, Compare and Contrast</p>
		<b>Ecology 102</b>	<p>Identify factors that can cause change within an ecosystem</p> <p>Evaluate the effects of different factors on ecosystem stability</p> <p>Describe changes that can occur within an ecosystem</p> <p>Skills Used: Understanding Cause and Effect, Making Logical Connections, Interpreting Observations</p>
		<b>Trophic Levels and Food Webs</b>	<p>Explain how relationships between organisms in an ecosystem contribute to energy flow within a food chain</p> <p>Analyze the effects of changes in populations on food web dynamics</p> <p>Differentiate between three types of energy pyramids</p> <p>Analyze relationships between producers, consumers and decomposers in an ecosystem</p> <p>Skills Used: Compare and Contrast, Create a Structure Diagram, Understanding Cause and Effect, Interpreting Observations</p>
		<b>Adaptation</b>	<p>Describe the development of the theory of evolution</p> <p>Explain the theory of evolution</p> <p>Relate adaptations of organisms to resource competition</p> <p>Skills Used: Create a Timeline, Making Logical Connections</p>
		<b>Global Connection: Why Invasive Species Thrive</b>	<p>Relate the ability of invasive species to thrive in their new habitat to resource competition.</p>

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<b>Topic 2: Habitats</b>			
<b>Organismal Relationships</b>			
Describe three types of interactions between organisms in an ecosystem			
Compare and contrast mutualism, parasitism, and commensalism			
Explain the effects of competitive exclusion on an ecosystem			
Skills Used: Compare and Contrast, Understanding Cause and Effect			
<b>Biodiversity</b>			
Analyze the effects of local evolution or migration on an ecosystem			
Predict the impact of removing or adding organisms on a food chain			
Explain how changes in biodiversity impact an ecosystem			
Skills Used: Making Predictions, Making Logical Connections			
<b>Land Habitats</b>			
Differentiate between biotic and abiotic factors in various ecosystems			
Explain the adaptations of indigenous species to their respective ecosystems			
Skills Used: Compare and Contrast			
<b>Aquatic Habitats</b>			
Compare and contrast the components of marine and freshwater ecosystems			
Differentiate between terrestrial and aquatic energy pyramids			
Skills Used: Compare and Contrast			
<b>Unit 3: Life on Earth - Cycles and Systems</b>			
<b>Topic 1: Earth's Cycles</b>			
<b>The Cycles of Matter</b>			
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			
<b>Effects of Cycles on Ecosystems</b>			
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			
<b>Energy Transformation</b>			
Discuss the main forms of energy in an ecosystem			
Explain how energy is transformed and conserved as it changes from one form to another			
Describe the impact of energy transformations on ecosystems			
Skills used: Making logical connections, creating diagrams, compare and contrast			

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		<b>Energy Transfer</b>	<ul style="list-style-type: none"> <li>Outline the flow of energy in an ecosystem</li> <li>Describe how the amount of available energy changes between trophic levels in a food chain</li> <li>Explain the relationship between entropy and usable energy in a food chain</li> <li>Skills used: Making logical connections, creating a flow chart</li> </ul>
		<b>Succession</b>	<ul style="list-style-type: none"> <li>Identify various causes of succession in ecosystems</li> <li>Differentiate between primary and secondary succession in ecosystems</li> <li>Explain the importance of succession in maintaining ecosystems</li> </ul>
<b>Topic 2: Earth's Systems</b>			
		<b>Systems and Cycles</b>	<ul style="list-style-type: none"> <li>Establish the features of systems and cycles including open and closed systems, positive and negative feedback</li> <li>Recognize the implications to an environment due to growth rate</li> <li>Apply the Gaia hypothesis for solving future environmental issues</li> <li>Relate the components of a cycle or system to consequences of improving the environment</li> </ul>
		<b>Skills Lesson: Modeling Systems and Cycles</b>	<ul style="list-style-type: none"> <li>Identify a system or cycle to be modeled</li> <li>Determine the main parts or processes of the system or cycle</li> <li>Organize the parts or processes sequentially</li> <li>Model the main parts or processes of the system or cycle</li> </ul>
		<b>Systems of the Biosphere</b>	<ul style="list-style-type: none"> <li>Describe Earth's systems in terms of energy, matter, time and space</li> <li>Explain the interactions between Earth's systems</li> </ul>
		<b>Patterns in Systems</b>	<ul style="list-style-type: none"> <li>Describe various patterns found in the Earth system</li> <li>Identify methods of measuring constancy and change in a system</li> </ul>
<b>Topic 3: Shaping Earth</b>			
		<b>Life and Earth's Crust</b>	<ul style="list-style-type: none"> <li>Describe the composition of each layer of the Earth</li> <li>Explain the structure and function of the Earth's crust</li> <li>Evaluate the interdependence of Earth's crust and its organisms</li> <li>Skills used: Create graph, map, chart</li> </ul>

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			<p><b>Global Connection: Recycling on Earth</b></p> <p>Compare human recycling techniques to similar cycles in nature</p> <p><b>Plate Tectonics</b></p> <p>Explain the theory of plate tectonics</p> <p>Relate the movement of the continents to changes in weather patterns</p> <p>Describe the impact of continental shifting on local environments</p> <p>Skills used: Create graph, map, chart</p> <p><b>Locating, Identifying, and Mining the Resources in the Earth</b></p> <p>Identify the factors responsible for mineral deposit distribution</p> <p>Explain the controlling factors of mineral exploitation</p> <p>Illustrate how waste generated from mineral resources affects the environment</p> <p>Investigate the role of nonrenewable minerals in sustainability efforts</p> <p><b>Minerals and Mining</b></p> <p>Identify uses of minerals</p> <p>Compare and contrast various mineral extraction methods</p> <p>Explain the impact of mining on local populations</p> <p>Describe the long-term consequences of large scale mineral extraction to the Earth</p> <p>Skills used: Determining the cause and predicting the effect</p> <p><b>Weathering and Erosion</b></p> <p>Compare and contrast weathering and erosion</p> <p>Distinguish between chemical and physical weathering</p> <p>Describe the effects of natural erosion on the environment</p> <p>Explain the impact of artificial erosion on the environment</p> <p>Skills used: Create graph, map, chart</p>
<b>Unit 4: Life on Earth -Biomes and Ecosystems</b>			
<b>Topic 1: Arid and Semi-Arid Biomes</b>			
			<p><b>Characteristics of Biomes</b></p> <p>Identify the characteristics used to define all biomes</p> <p>Summarize the history of biomes on Earth</p> <p>Describe the impact of humanity on Earth's biomes</p> <p>Compare and contrast artificial and natural changes within a biome</p> <p>Skills Used: Compare and Contrast, Understanding Cause and Effect, Identifying Trends</p>

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**Desert and Desert-Scrub Biomes**

Identify the characteristics of desert and desert-scrub biomes

Evaluate ways organisms have adapted to desert and desert-scrub environments

Skills Used: Making Logical Connections, Compare and Contrast

**The Chaparral**

Identify the characteristics of chaparral biomes

Evaluate ways organisms have adapted to chaparral

Skills Used: Making Logical Connections

**Alpine and Taiga Biome**

Identify the characteristics of the alpine and taiga biomes

Evaluate ways organisms have adapted to the alpine and taiga biomes

Skills Used: Making Logical Connections, Compare and Contrast

**The Tundra**

Identify the characteristics of the tundra

Evaluate ways organisms have adapted to the tundra

Skills Used: Making Logical Connections

**Topic 2: Temperate, Wet, and Aquatic Biomes**

**Savanna and Grassland Biomes**

Identify the characteristics of the savanna and grassland biomes

Evaluate ways organisms have adapted to the savanna and grasslands

Skills Used: Making Logical Connections, Compare and Contrast

**Deciduous Forests**

Identify the characteristics of deciduous forests

Evaluate ways organisms have adapted to deciduous forests

Skills Used: Making Logical Connections

**The Rainforest**

Identify the characteristics of the rainforest

Evaluate ways organisms have adapted to the rainforest

Skills Used: Making Logical Connections

Unit	Topic	Lesson	Lesson Objectives
<b>Topic 3: Freshwater Ecosystems</b>			
<b>Freshwater and Marine Biomes</b>			
Identify characteristics that are unique to each of the aquatic biomes			
Compare and contrast the adaptations of organisms in the aquatic biomes to their respective environments			
Explain how human understanding of aquatic ecosystems has changed throughout history			
Skills Used: Compare and Contrast, Identifying Trends			
<b>Pools, Ponds and Lakes</b>			
Compare and contrast the characteristics of pools, ponds, and lakes			
Differentiate littoral and riparian areas			
Describe the cause of eutrophication and its effects on the environment			
Assess the relationships between organisms that live in pools, ponds, and lakes			
<b>Streams and Rivers</b>			
Compare and contrast the characteristics of streams and rivers			
Describe the impact of current and oxygen content on biodiversity in streams and rivers			
Explain various ways humans impact rivers and streams			
Assess the relationships between organisms that live in streams and rivers			
<b>Wetlands</b>			
Differentiate various types of wetlands			
Distinguish between the main types of water found in wetlands			
Assess the biodiversity of organisms found in wetlands			
Explain how the wetlands filter and clean water			
<b>Topic 4: Marine Ecosystems</b>			
<b>Ocean Exploration</b>			
Explore the relationship between technology and new developments in oceanography			
Discuss possible applications of recent discoveries within the ocean			
Examine how recent discoveries in abyssal zones have impacted scientific theories			
<b>Salt Marshes and Mangroves</b>			
Identify characteristics of salt marsh and mangrove habitats			
Explain how utilization of mangrove and salt marshes has changed over time			
Propose alternative ways to utilize resources in mangroves and salt marshes			
Skills used: Forming a Valid Hypothesis			

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		<b>Coral Reefs</b>	<p>Describe the characteristics of a coral reef</p> <p>Explain the relationship between aquatic organisms and the coral reef</p> <p>Examine causes of coral reef loss</p> <p>Analyze the effectiveness of current efforts to preserve coral reefs</p> <p>Skills used: Forming a Valid Hypothesis</p>
		<b>Issues Affecting Marine Ecosystems</b>	<p>Identify the impacts of floating refuse on marine ecosystems</p> <p>Describe how fisheries and ocean bottom trawling impact marine ecosystems</p> <p>Evaluate methods humans are using to reduce their impact on marine ecosystems</p>
<b>Unit 5: Human Population &amp; Urban Environments</b>			
<b>Topic 1: Population Dynamics</b>			
		<b>Population Size</b>	<p>Identify biotic and abiotic factors that limit population growth</p> <p>Evaluate the effect of various factors on population size</p> <p>Analyze population patterns within ecosystems</p> <p>Skills Used: Interpreting Data, Understanding Cause and Effect, Making Logical Connections</p>
		<b>Population Genetics</b>	<p>Examine ways in which populations can be altered by genetic drift and the founder effect</p> <p>Explain how a bottleneck event can affect the genetics of a population</p> <p>Skills Used: Interpreting Data, Understanding Cause and Effect</p>
		<b>Determining Population Size</b>	<p>Compare and contrast various methods of determining population size</p> <p>Distinguish between major population growth models</p> <p>Calculate population density</p> <p>Skills Used: Interpreting Data, Compare and Contrast, Calculating Data</p>
		<b>Measuring Populations</b>	<p>Compare and contrast various types of population distribution</p> <p>Differentiate between stabilizing, disruptive and directional selection utilizing a graph</p> <p>Illustrate the structure of a given population demographic</p> <p>Skills Used: Compare and Contrast, Create a Structure Diagram, Interpreting Data</p>

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<b>Topic 2: Human Populations and Urban Environments</b>			
<b>Urban Growth</b>			
<p>Compare and contrast various urban and suburban migration patterns seen on the Earth</p> <p>Describe the effects of upward growth on local environments</p> <p>Describe the effects of urban sprawl on local environments</p> <p>Skills used: Determine the cause and predict the effect</p>			
<b>Limiting Factors and Humans</b>			
<p>Identify the influences of environment on behavior</p> <p>Explain the impact of limiting factors on human society</p> <p>Describe factors that can impact the stability of a society</p> <p>Skills used: Making logical connections, supporting claims, understanding cause and effect, making valid criticisms</p>			
<b>Sustainability</b>			
<p>Compare and contrast the impact of differing human lifestyles on sustainability</p> <p>Describe future sustainability utilizing graphs and current data</p> <p>Skills used: Making predictions, identifying trends, understanding cause and effect, compare and contrast, graphing projections</p>			
<b>Humans and the Energy Cycle</b>			
<p>Describe the relationship between energy consumption and quality of living</p> <p>Explain the impact of energy flow and cycles of matter on society</p> <p>Skills used: Creating a flow chart, making predictions, making logical connections, identifying trends and patterns</p>			
<b>Societal Consequences</b>			
<p>Determine the impact of biotechnology on society and the environment</p> <p>Explain the benefits and disadvantages of scientific and medical advancements to society</p> <p>Skills used: Supporting claims, researching with technology, making valid criticisms, understanding cause and effect</p>			
<b>Topic 3: The Environmental Impact of Humans and Technology</b>			
<b>Human Events and the Environment</b>			
<p>Evaluate the impact of different agricultural techniques on the environment</p> <p>Describe the effects of large-scale environmental catastrophes</p> <p>Skills used: Making predictions, identifying trends, understanding cause and effect, graphing projections, compare and contrast, making valid criticisms, supporting claims</p>			

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			<p><b>Natural Events and the Environment</b></p> <p>Explain how human activities impact the effects of natural disasters</p> <p>Describe the impact of natural disasters on local populations</p> <p>Skills used: Understanding cause and effect, graphing projections, making logical connections, supporting claims</p> <p><b>Effects of Technology</b></p> <p>Describe the impact of energy producing technologies on the environment and the acquisition of natural resources</p> <p>Explain how energy producing technologies impact land fertility and aquatic viability</p> <p>Skills used: Making predictions, identifying trends, researching with technology, understanding cause and effect, interpreting observations, evaluating explanations, making valid criticisms</p> <p><b>Success Stories</b></p> <p>Describe various ways communities are attempting to restore and protect ecosystems</p> <p>Give examples of emerging efforts designed to successfully address environmental issues</p> <p>Skills used: Understanding cause and effect</p> <p><b>Global Connection: Changing Migratory Patterns</b></p> <p>Explain how migratory patterns change in response to alterations in an ecosystem</p>

## Unit 6: Soil, Food & Agriculture

### Topic 1: Soil

#### What is Soil?

Describe the composition of soil

Characterize the major horizons in soil

Compare processes of soil formation in various environments

Skills used: Selecting Valid Resources

#### Soil Formation

Identify the properties of soil

Explain the relationship between microorganisms, humus, and soil health

Assess the role of microorganisms in soil

Skills used: Selecting Valid Resources

#### Soil Around the World

Explain the relationships between organisms and soil of different ecosystems

Compare and contrast the soil composition of different ecosystems

Describe ways in which humans impact soil

Unit	Topic	Lesson	Lesson Objectives
		<b>Disposal and Management of Waste</b>	<ul style="list-style-type: none"> <li>Classify types of solid waste management</li> <li>Survey the laws governing waste management</li> <li>Compare alternate methods of managing waste</li> <li>Discern the implications of managing hazardous waste</li> </ul>
	<b>Topic 2: Food and Agriculture</b>		
		<b>Soil and Agriculture</b>	<ul style="list-style-type: none"> <li>Compare and contrast various agricultural practices around the world</li> <li>Evaluate various methods used in agriculture to minimize soil depletion and erosion</li> <li>Skills used: Selecting Valid Resources</li> </ul>
		<b>Food Production Practices</b>	<ul style="list-style-type: none"> <li>Illustrate the factors which affect food distribution and food production</li> <li>Identify the effects of genetically engineered crops</li> <li>Analyze the process and effectiveness of alternative agricultural methods</li> </ul>
		<b>Farming Practices</b>	<ul style="list-style-type: none"> <li>Establish the causes of desertification</li> <li>Show how agriculture can lead to soil erosion</li> <li>Correlate over-use of water, pesticides, and fertilizers to the effect on soil fertility</li> </ul>
		<b>Global Connection: Microflora and Microfauna</b>	<ul style="list-style-type: none"> <li>Evaluate how agricultural practices affect microflora and microfauna</li> </ul>
	<b>Unit 7: Wildlife and Land Management</b>		
	<b>Topic 1: Wildlife Management</b>		
		<b>Wildlife Management Through Land Sustainability</b>	<ul style="list-style-type: none"> <li>Classify major forestry issues</li> <li>Examine practices used to manage of parks, nature preserves, and wilderness areas</li> <li>Assess current management issues and conflicts in wildlife management</li> </ul>
		<b>Global Connection: Deforestation in Haiti</b>	<ul style="list-style-type: none"> <li>Assess how deforestation in Haiti impacts the environment</li> </ul>
		<b>Species Conservation</b>	<ul style="list-style-type: none"> <li>Predict possible outcomes of failing to conserve species diversity</li> <li>Relate habitat and ecosystem management to species conservation</li> <li>Plan steps to achieve sustainable populations</li> </ul>
		<b>Global Connection: Newfoundland Cod Fishery Collapse</b>	<ul style="list-style-type: none"> <li>Assess the societal and environmental consequences of government policy</li> </ul>

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<b>Topic 2: Land Use</b>			
<b>The Importance of Trees</b>			
Explain the impact of trees on air quality			
Identify methods in which trees are utilized by humans			
Describe the relationship between trees and other organisms			
Analyze the consequences of human use of trees			
Skills used: Constructing valid criticism			
<b>Rainforest Loss</b>			
Identify the locations of the world's rainforests			
Explain how rainforest resources are utilized throughout the globe			
Evaluate the impact of rainforest loss over the last 100 years			
Compare and contrast the effectiveness of current rainforest conservation efforts			
Skills used: Constructing valid criticism			
<b>Modern Forestry</b>			
Describe the main roles of a forester			
Compare and contrast current methods of forest management			
Analyze the role of forests as carbon sinks			
Skills used: Constructing valid criticism			
<b>Fire and Nature</b>			
Evaluate ways that wildfire benefits ecosystems			
Analyze methods of fire utilization within various environments			
Predict how fire can be used to further benefit the environment			
Skills used: Constructing valid criticism			
<b>Human Use of Land</b>			
Assess the effects of human land usage on ecosystems			
Compare and contrast ways humans are working to reduce the impact of land use on the environment			
Describe possible future consequences of land use to the environment			
Skills used: Determine the cause and predict the effect			
<b>Land Management and Planning</b>			
Describe differences in the use of public land and private land			
Describe large-scale land management methods implemented by governments and corporations			
Determine possible impacts of land management methods on the environment			
Skills used: Determine the cause and predict the effect			

Unit	Topic	Lesson	Lesson Objectives
<b>Unit 8: Human, Risk and Toxicology</b>			
<b>Topic 1: Human Health</b>			
<b>Environmental Health</b>			
Categorize environmental pollutants by source and effect			
Assess hazards associated with each category of pollutant			
Provide examples of the general effects of pollutants on populations			
<b>Other Influences on Personal Health</b>			
Describe the relationship between heredity and personal health			
Compare and contrast the impact of genetic and environmental factors on individual and public health			
Skills used: Compare and contrast, understanding cause and effect, making predictions			
<b>Topic 2: Environmental Hazards</b>			
<b>The Environment and the Individual</b>			
Describe the relationship between the environment and personal health			
Identify synthetic environmental health hazards			
Skills used: Making logical connections, interpreting observations, understanding cause and effect, compare and contrast			
<b>Natural Disasters and Hazards</b>			
Differentiate between hazards, disasters, and catastrophes			
Relate natural disasters and human catastrophies			
Construct strategies to predict and mitigate natural disasters			
<b>Unit 9: Energy Resources and Energy Use</b>			
<b>Topic 1: Energy Resources</b>			
<b>Energy Resources</b>			
Describe the basic principles of energy and energy efficiency			
Examine energy sources and related energy consumption			
Investigate energy choices by interpreting energy policies			
<b>What are Natural Resources?</b>			
Explain how natural resources are produced			
Explain how fossil fuels are formed			
Explain how resource availability is limited by rates of use and renewal			
Skills used: Making predictions, compare and contrast, researching with technology, making logical connections			

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		<b>Nuclear Power</b>	<p>Compare and contrast the processes of nuclear fission and nuclear fusion</p> <p>Describe uses of nuclear energy</p> <p>Examine possible consequences of using nuclear energy</p> <p>Skills used: Researching with technology, modeling systems, compare and contrast, making logical connections</p>
		<b>Global Connection: Nuclear Fuel</b>	<p>Evaluate the environmental impact of using nuclear fuel</p>
		<b>Fossil Fuels</b>	<p>Illustrate how natural gas, oil, and coal form</p> <p>Evaluate the environmental impacts on fossil fuel production</p> <p>Formulate evidence to support the need to move away from fossil fuels to alternative energy</p>
<b>Topic 2: Renewable Energy Sources</b>			
		<b>Renewable and Alternative Energy</b>	<p>Determine the advantages and disadvantages of each type of alternative energy</p> <p>Compare passive, active, and photovoltaic solar energy systems</p> <p>Predict the possibility of replacing fossil fuel with biofuels in the future</p>
		<b>Resource Conservation</b>	<p>Assess the availability and allocation of resources</p> <p>Discuss problems associated with the use of non-local resources</p> <p>Compare and contrast uses of renewable and nonrenewable resources</p> <p>Propose alternatives to using nonrenewable resources</p> <p>Skills used: Compare and contrast, proposing alternative solutions, researching with technology</p>
		<b>The Social Costs of Resource Use</b>	<p>Compare and contrast the costs and benefits of using renewable and nonrenewable resources</p> <p>Evaluate the consequences of world dependence on fuels</p> <p>Explain how technology can be utilized in resource conservation efforts</p> <p>Skills used: Making logical connections, evaluating explanations, compare and contrast</p>

Unit	Topic	Lesson	Lesson Objectives
<b>Unit 10: Water Resources and Water Pollution</b>			
<b>Topic 1: Water Resources</b>			
<b>The Water We Use</b>			
Identify sources of potable and non-potable water			
Describe the availability of water across the globe			
Assess the impact of water consumption and diminishing supplies on human activities			
<b>Groundwater</b>			
Describe the location and importance of the water table			
Assess the consequences of overuse and contamination of groundwater			
Explain how human use of groundwater has changed over time			
Skills used: Determining Independent and Dependent Variables			
<b>Changing Waterways</b>			
Describe naturally occurring changes to waterways			
Evaluate ways humans impact waterways			
Propose alternative practices to reduce human impact on waterways			
<b>Topic 2: Water Pollution</b>			
<b>Water Policy</b>			
Identify laws and regulations in the United States that address water use and management			
Propose possible consequences of failing to conserve water			
Compare and contrast the processes of water reclamation, greywater use, and desalination			
<b>Nonnative Species in Aquatic Ecosystems</b>			
Describe how invasive species impact an aquatic ecosystem			
Identify ways that invasive species are introduced into an aquatic ecosystem			
Examine various methods of addressing environmental problems that were traditionally solved by utilizing nonnative species			
<b>Water Pollution</b>			
Identify sources of water pollution			
Describe the effects of water pollution on local populations			
Explain ways that humans can reduce water pollution			
<b>Global Connection: Water Management and Katrina</b>			
Analyze the effect of canals and levees on wetlands			

Unit	Topic	Lesson	Lesson Objectives
<b>Unit 11: Atmospheric Dynamics, Climate Change, and Air Pollution</b>			
<b>Topic 1: The Climate of the Earth</b>			
<b>Skills Lesson: Evaluating Explanations</b>			
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			
<b>The Earth's Atmosphere</b>			
Relate atmospheric structure to the processes that determine climate			
Model the role of greenhouse gases in the greenhouse effect on climate			
Predict environmental changes as a result of global warming and propose solutions			
<b>Climate and Change in Ecosystems</b>			
Identify various effects of climate changes on an ecosystem			
Describe environmental factors that can cause changes in ecosystems			
Compare and contrast the benefits and disadvantages of natural change to ecosystems			
<b>Global Change</b>			
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			
<b>A History of Global Climate Change</b>			
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			
<b>Topic 2: Air Pollution</b>			
<b>Air Quality</b>			
Identify various causes of air pollution			
Explain the impact of air pollution on the environment			
Assess the methods that can be utilized to improve air quality			
Propose alternative methods of improving air quality			
Skills used: Compare and Contrast Support and Opposition			

Unit	Topic	Lesson	Lesson Objectives
		<b>Atmospheric Pollution</b>	<ul style="list-style-type: none"> <li>Overview the composition and function of each layer of the atmosphere</li> <li>Identify various common atmospheric pollutants</li> <li>Differentiate between primary and secondary pollutants</li> <li>Examine the effects of pollution on health</li> <li>Skills used: Evaluate the validity of an explanation</li> </ul>
		<b>Ozone</b>	<ul style="list-style-type: none"> <li>Explain how the ozone layer is formed</li> <li>Analyze the importance of the ozone layer in sustaining life</li> <li>Compare and contrast various factors that cause ozone depletion</li> <li>Relate fluctuations in ozone to human health and the environment</li> </ul>
		<b>Indoor Air Pollution</b>	<ul style="list-style-type: none"> <li>Relate health problems to their source of indoor air pollutant</li> <li>Establish the links between indoor pollutants such as carbon dioxide, environmental tobacco smoke, and radon to their impact on human health</li> <li>Provide strategies to reduce indoor air pollution</li> </ul>