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# Environmental Science

Curriculum Guide

Scranton School District

Scranton, PA



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**Environmental Science**

**Prerequisites:**

- General Science and Biology

Environmental science is a one credit course designed to further develop students' knowledge and skills that apply to major environmental science concepts. Upon successful completion of the course, students will have a working knowledge of the course content and be able to apply this knowledge and skill set to demonstrate an understanding of a variety of environmental concepts. In particular, a major focus of this course is the interrelationships of humans and the natural world. In addition, students should be able to analyze environmental issues, their proposed solutions, and the importance of studying these issues.

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Year-at-a-glance

<b>Subject: Environmental Science</b>	<b>Grade Levels: 11 and 12</b>	<b>Date Completed: 8/5/15</b>
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**1<sup>st</sup> Quarter**

<b>Topic</b>	<b>Resources</b>	<b>Academic Standards</b>
<b>Introduction</b>	Approved text Environmental Science Activities Kit Project Wild	4.1.10.A 4.1.12.A 4.5.10.A 4.5.12.A CC.3.5.11-12.A CC.3.5.11-12.B CC.3.5.11-12.C
<b>Organization of Life</b>	Approved text Environmental Science Activities Kit Project Wild	4.1.10.A 4.1.12.A 4.1.10.C 4.1.12.C CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.5.11-12.E
<b>Ecosystems</b>	Approved text Environmental Science Activities Kit Project Wild	4.1.10.B 4.1.12.B 4.1.10.E 4.1.12.E CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D

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<b>Biodiversity</b>	<b>Approved text</b> <b>Environmental Science Activities Kit</b> <b>Project Wild</b>	<b>4.1.10.D</b> <b>4.1.12.D</b> <b>CC.3.5.11-12.B</b> <b>CC.3.5.11-12.C</b> <b>CC.3.5.11-12.D</b> <b>CC.3.6.11-12.G</b> <b>CC.3.6.11-12.H</b> <b>CC.3.5.11-12.I</b>
<b>Populations</b>	<b>Approved text</b> <b>Environmental Science Activities Kit</b> <b>Project Wild</b>	<b>4.1.10.A</b> <b>4.1.12.A</b> <b>CC.3.5.11-12.B</b> <b>CC.3.5.11-12.C</b> <b>CC.3.5.11-12.D</b> <b>CC.3.5.11-12.E</b>

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2<sup>nd</sup> Quarter

Topic	Resources	Academic Standards
Watershed, Wetlands, and Aquatic Biomes	Approved text Environmental Science Activities Kit Project Wet	4.2.10.A 4.2.12.A 4.2.10.C 4.2.12.C 4.5.10.C 4.5.12.C CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.6.11-12.B CC.3.6.11-12.E CC.3.6.11-12.F CC.3.6.11-12.G CC.3.6.11-12.H CC.3.6.11-12.I
Air and Atmosphere	Approved text Environmental Science Activities Kit	4.5.10.C 4.5.12.C CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.6.11-12.B CC.3.6.11-12.E CC.3.6.11-12.F CC.3.6.11-12.G CC.3.6.11-12.H CC.3.6.11-12.I

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<b>Climate Change</b>	<b>Approved text</b> <b>Environmental Science Activities Kit</b>	<b>4.3.10.A</b> <b>4.3.12A</b> <b>4.5.10.A</b> <b>4.5.12.A</b> <b>4.5.10.C</b> <b>4.5.12.C</b> <b>CC.3.5.11-12.B</b> <b>CC.3.5.11-12.C</b> <b>CC.3.5.11-12.D</b>
<b>Land Use, Management, and Conservation</b>	<b>Approved text</b> <b>Environmental Science Activities Kit</b> <b>Project Wild</b>	<b>4.3.10.B</b> <b>4.3.12.B</b> <b>4.5.10.A</b> <b>4.5.12.A</b> <b>CC.3.5.11-12.B</b> <b>CC.3.5.11-12.C</b> <b>CC.3.5.11-12.D</b>

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**3<sup>rd</sup> Quarter**

Topic	Resources	Academic Standards
<p><b>Agriculture (Food and Fiber System)</b></p>	<p><b>Approved text Approved text Environmental Science Activities Kit</b></p>	<p><b>4.4.10.A 4.4.12.A 4.4.10.B 4.4.12.B 4.4.10.C 4.4.12.C 4.4.10.D 4.4.12.D 4.5.10.B 4.5.12.B CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D</b></p>
<p><b>Mining and Minerals</b></p>	<p><b>Approved text Environmental Science Activities Kit</b></p>	<p><b>4.3.10.A 4.3.12A 4.5.10.A 4.5.12.A 4.5.10.C 4.5.12.C CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D</b></p>

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<p><b>Nonrenewable Energy</b></p>	<p><b>Approved text</b> <b>Environmental Science Activities Kit</b></p>	<p><b>4.3.10.A</b> <b>4.3.12.A</b> <b>4.5.10.A</b> <b>4.5.12.A</b> <b>4.5.10.C</b> <b>4.5.12.C</b> <b>CC.3.5.11-12.B</b> <b>CC.3.5.11-12.C</b> <b>CC.3.5.11-12.D</b> <b>CC.3.6.11-12.B</b> <b>CC.3.6.11-12.E</b> <b>CC.3.6.11-12.F</b> <b>CC.3.6.11-12.G</b> <b>CC.3.6.11-12.H</b> <b>CC.3.6.11-12.I</b></p>
<p><b>Renewable Energy</b></p>	<p><b>Approved text</b> <b>Environmental Science Activities Kit</b></p>	<p><b>4.3.10.A</b> <b>4.3.12.A</b> <b>4.5.10.A</b> <b>4.5.12.A</b> <b>4.5.10.C</b> <b>4.5.12.C</b> <b>CC.3.5.11-12.B</b> <b>CC.3.5.11-12.C</b> <b>CC.3.5.11-12.D</b> <b>CC.3.6.11-12.B</b> <b>CC.3.6.11-12.E</b> <b>CC.3.6.11-12.F</b> <b>CC.3.6.11-12.G</b> <b>CC.3.6.11-12.H</b> <b>CC.3.6.11-12.I</b></p>



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**4<sup>th</sup> Quarter**

Topic	Resources	Academic Standards
Waste Management	Approved text	4.3.10.D 4.3.12.D CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D
Environment and Human Health	Approved text Environmental Science Activities Kit	4.5.10.E 4.5.12.E CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.6.11-12.B CC.3.6.11-12.E CC.3.6.11-12.F CC.3.6.11-12.G CC.3.6.11-12.H
Economics and Policy	Approved text Environmental Science Activities Kit Project Wild	4.3.10A 4.3.12A 4.5.10.A 4.5.12.A CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.6.11-12.B CC.3.6.11-12.E CC.3.6.11-12.F CC.3.6.11-12.G CC.3.6.11-12.H
Final Review	Approved text	Inclusive

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General Topic	Academic Standard(s)	Essential Knowledge, Skills & Vocabulary	Resources & Activities	Assessments	Suggested Time
Introduction	<p>The Environment: 4.1.10.A 4.1.12.A</p> <p>Sustainability: 4.5.10.A 4.5.12.A</p> <p>Common Core Reading and Writing: CC.3.5.11-12.A CC.3.5.11-12.C CC.3.5.11-12.D</p>	<ul style="list-style-type: none"> <li>- Define environmental science and compare with ecology</li> <li>- List the five fields that contribute to environmental science</li> <li>- Describe the effects of the three major time periods of human history with respect to the environment: 1) hunter-gather period, 2) agricultural revolution, and 3) the industrial revolution</li> <li>- Classify environmental problems into major categories: 1) resource depletion, 2) pollution, and 3) loss of biodiversity.</li> <li>- Describe sustainability, the goal of environmental science.</li> </ul> <p>Key terms/concepts –</p> <ul style="list-style-type: none"> <li>- Environmental science</li> <li>- Ecology</li> <li>- Nonrenewable resource</li> <li>- Renewable resource</li> <li>- Pollution</li> <li>- Biodiversity</li> <li>- Hunter-gatherers</li> <li>- Agricultural revolution</li> <li>- Industrial revolution</li> <li>- Open system</li> <li>- Closed system</li> <li>- Ecological footprint</li> <li>- Tragedy of the commons</li> <li>- Sustainability</li> </ul>	<p>Approved Text</p> <p>Quicklab: Classifying resources as renewable or nonrenewable</p> <p>Activity: Go Fish! An Example of the Tragedy of the Commons <a href="http://earthwatch.org/Portals/0/Downloads/Education/Lesson-Plans/Go_Fish.pdf">http://earthwatch.org/Portals/0/Downloads/Education/Lesson-Plans/Go_Fish.pdf</a></p> <p>Activity: Determine Your Ecological Footprint</p> <p>Activity: Wants vs Needs</p>	<p>Teacher prepared tests, quizzes, etc.</p>	<p>5-7 Days</p>

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<p><b>Organization of Life</b></p>	<p><b>The Environment:</b> 4.1.10.A 4.1.12.A</p> <p><b>Energy Flow:</b> 4.1.10.C 4.1.12.C</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.5.11-12.E</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Define an ecosystem</li> <li>- Distinguish between biotic and abiotic factors.</li> <li>- Describe how life is categorized into different levels and be able to identify those levels.</li> </ul> <p><b>Key Terms/Concepts:</b></p> <ul style="list-style-type: none"> <li>- Biotic factor</li> <li>- Abiotic factor</li> <li>- Organism</li> <li>- Population</li> <li>- Community</li> <li>- Ecosystem</li> <li>- Biosphere</li> <li>- Habitat</li> <li>- Niche</li> </ul>	<p><b>Approved Text</b></p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Notebook foldable</li> <li>- Photo scavenger hunt</li> </ul>	<p><b>Teacher prepared tests, quizzes, etc.</b></p>	<p><b>2-3 Days</b></p>
<p><b>Ecosystems</b></p>	<p><b>Materials Cycle:</b> 4.1.10.B 4.1.12.B</p> <p><b>Succession:</b> 4.1.10.E 4.1.12.E</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Describe how energy cycles through ecosystems.</li> <li>- Describe how energy loss affects an ecosystem.</li> <li>- Describe the cycling of materials in ecosystems.</li> <li>- Describe the two types of ecological succession including where, when, and how they occur.</li> </ul> <p><b>Key Terms/Concepts:</b></p> <ul style="list-style-type: none"> <li>- Producer</li> <li>- Consumer</li> <li>- Decomposer</li> <li>- Photosynthesis</li> <li>- Chemosynthesis</li> <li>- Cellular respiration</li> <li>- Food chain</li> </ul>	<p><b>Approved Text</b></p> <p><b>Food chain/web project.</b> Ex: <u>Food Chains</u> or <u>We're all in the Web</u> Roa, M. (2009). Environmental science activities kit: Ready-to-use lessons, labs, and worksheets for grades 7-12 (2nd ed., pp. 324-346). San Francisco, Calif.: Jossey-Bass.</p> <p><b>Food web collapse game.</b></p>	<p><b>Teacher prepared tests, quizzes, etc.</b></p>	<p><b>8-10 Days</b></p>

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		<ul style="list-style-type: none"> <li>- Food web</li> <li>- Trophic level</li> <li>- Energy transfer</li> <li>- Carbon cycle</li> <li>- Nitrogen cycle               <ul style="list-style-type: none"> <li>o Nitrogen fixing bacteria</li> <li>o Nitrifying bacteria</li> </ul> </li> <li>- Phosphorus cycle</li> <li>- Sulfur Cycle</li> <li>- Ecological succession               <ul style="list-style-type: none"> <li>o Primary succession</li> <li>o Secondary succession</li> <li>o Pioneer species</li> <li>o Climax species</li> </ul> </li> </ul>			
<b>Biodiversity</b>	<p><b>Biodiversity:</b> 4.1.10.D 4.1.12.D</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.6.11-12.G CC.3.6.11-12.H CC.3.5.11-12.I</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Describe biodiversity and its three types: species, ecosystem, and genetic.</li> <li>- Explain how and why biodiversity is important to ecosystems and humans.</li> <li>- Analyze species’ potentials; ecosystem dependence (keystone species) as well as medical, industrial and agricultural uses.</li> <li>- Define and give examples of threatened and endangered species.</li> <li>- Describe/Explain how species become threatened/endangered/extinct.</li> <li>- Identify and assess current biological “hotspots”.</li> <li>- Explain and analyze ways of preserving biological diversity.</li> <li>- Explain advantages of protecting ecosystems rather than a species.</li> <li>- Describe the provisions of the Endangered Species Act.</li> </ul>	<p><b>Approved Text</b></p> <p><b>Biodiversity Webquest –</b> choose an endangered organism describing its niche and importance.</p> <p><b>Biodiversity Hotspot Project:</b> Students select from a list of biodiversity hotspots and describe the biome, threats, and current attempts to preserve the location and the organisms it supports.</p>	<p><b>Teacher prepared tests, quizzes, etc.</b></p>	<b>12-15 Days</b>

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		<ul style="list-style-type: none"> <li>- <b>Develop an argument for/against conservation of certain species.</b></li> <li>- <b>Investigate the role of international cooperation with respect to species conservation.</b></li> </ul> <p><b>Key Terms/Concepts:</b></p> <ul style="list-style-type: none"> <li>- <b>Biodiversity</b> <ul style="list-style-type: none"> <li>○ <b>Species diversity</b></li> <li>○ <b>Ecosystem diversity</b></li> <li>○ <b>Genetic diversity</b></li> </ul> </li> <li>- <b>Keystone species</b></li> <li>- <b>Population bottleneck</b></li> <li>- <b>Ethics</b></li> <li>- <b>Aesthetics</b></li> <li>- <b>Ecotourism</b></li> <li>- <b>Threatened species</b></li> <li>- <b>Endangered species</b></li> <li>- <b>Endemic species</b></li> <li>- <b>Exotic species</b></li> <li>- <b>Habitat</b> <ul style="list-style-type: none"> <li>○ <b>Destruction</b></li> <li>○ <b>Fragmentation</b></li> </ul> </li> <li>- <b>Poaching</b></li> <li>- <b>Endangered Species Act</b> <ul style="list-style-type: none"> <li>○ <b>Species recovery plan</b></li> <li>○ <b>Habitat conservation plan</b></li> </ul> </li> <li>- <b>Biodiversity Treaty</b></li> <li>- <b>International Union for the Conservation of Nature and Natural Resources (IUCN)</b></li> <li>- <b>Convention on International Trade in Endangered Species (CITES)</b></li> </ul>			
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<p><b>Populations</b></p>	<p><b>Ecology:</b> 4.1.10.A 4.1.12.A</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.5.11-12.E</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Describe the three characteristics of populations.</li> <li>- Describe exponential growth of populations.</li> <li>- Describe factors that contribute to the growth rate of a population.</li> <li>- Analyze a population and describe limits to population growth.</li> <li>- Explain carrying capacity.</li> </ul> <p><b>Key Terms/Concepts:</b></p> <ul style="list-style-type: none"> <li>- Population</li> <li>- Density</li> <li>- Dispersion</li> <li>- Growth rate</li> <li>- Reproductive potential</li> <li>- Exponential growth</li> <li>- Population growth/regulation <ul style="list-style-type: none"> <li>o Carrying capacity</li> <li>o Resource limits</li> <li>o Competition <ul style="list-style-type: none"> <li>▪ Direct</li> <li>▪ indirect</li> </ul> </li> <li>o Density dependent</li> <li>o Density independent</li> </ul> </li> <li>- Niche</li> <li>- Symbiosis <ul style="list-style-type: none"> <li>o Predation/parasitism</li> <li>o Commensalism</li> <li>o Mutualism</li> </ul> </li> <li>- Coevolution</li> </ul>	<p><b>Approved text.</b></p> <p><b>Graphing exercises to demonstrate growth patterns.</b></p> <p><b>Lab: Students are given different tools to “hunt” for an organism to demonstrate limitations to populations.</b></p>	<p><b>Teacher prepared tests, quizzes, etc.</b></p>	<p><b>5 – 7 Days</b></p>
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<p><b>QII</b> <b>Watersheds</b></p>	<p><b>Watersheds:</b> 4.2.10.A 4.2.12.A</p> <p><b>Aquatic Ecosystems:</b> 4.2.10.C 4.2.12.C</p> <p><b>Pollution:</b> 4.5.10.C 4.5.12.C</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.6.11-12.B CC.3.6.11-12.E CC.3.6.11-12.F CC.3.6.11-12.G CC.3.6.11-12.H CC.3.6.11-12.I</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Describe the distribution of the Earth’s water resources</li> <li>- Explain why fresh water is a limited resource.</li> <li>- Describe the distribution of the Earth’s surface water</li> <li>- Describe the relationship between groundwater and surface water in a watershed</li> <li>- Identify patterns of water use.</li> <li>- Identify how water is used in homes, industry, and in agriculture.</li> <li>- Describe methods of water management for freshwater and saltwater resources</li> <li>- Identify and explain water conservation efforts.</li> <li>- Identify sources of pollution and explain their effects on aquatic ecosystems.</li> <li>- Compare point-source and nonpoint-source pollution.</li> <li>- Explain different ways in which wastewater can be treated.</li> <li>- Explain major laws designed to improve water quality in the United States.</li> </ul> <p><b>Key Terms/ Concepts</b></p> <ul style="list-style-type: none"> <li>- Surface water</li> <li>- River system</li> <li>- Watershed</li> <li>- Groundwater <ul style="list-style-type: none"> <li>○ Aquifer</li> <li>○ Porosity</li> <li>○ Permeability</li> <li>○ Recharge zone</li> </ul> </li> </ul>	<p><b>Approved Text</b></p> <p>Project Wet Curriculum</p> <p><b>Labs:</b></p> <ul style="list-style-type: none"> <li>- Students can well</li> <li>- Students can make their own water filtration systems</li> <li>- Students can be given materials to attempt to clean up an “oil spill”</li> <li>- Construction of a watershed table to demonstrate runoff, point source and non-point source pollution.</li> </ul> <p><b>Water conservation commercial/poster/PSA.</b></p>	<p><b>Teacher prepared tests, quizzes, etc.</b></p>	<p><b>7-10 Days</b></p>
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		<ul style="list-style-type: none"> <li>- Pathogen</li> <li>- Irrigation</li> <li>- Dam</li> <li>- Reservoir</li> <li>- Desalination</li> <li>- Water pollution               <ul style="list-style-type: none"> <li>○ Point-source</li> <li>○ Nonpoint-source</li> <li>○ Thermal pollution</li> <li>○ Eutrophication</li> <li>○ Biomagnifications</li> <li>○ Agriculture</li> </ul> </li> </ul>			
Wetlands	<p><b>Watersheds:</b> 4.2.10.A 4.2.12.A</p> <p><b>Pollution:</b> 4.5.10 C 4.5.12 C</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Describe the characteristics and major types of freshwater and saltwater wetlands.</li> <li>- Describe the environmental functions of wetlands and their importance to both the ecosystems and humans.</li> <li>- Describe the threats against wetland ecosystems.</li> <li>- Explain how wetland ecosystems and marine ecosystems are connected.</li> <li>- Analyze the role of Pennsylvania with regards to the health of the Chesapeake Bay</li> <li>- Describe how man-made wetlands can be used for bioremediation.</li> </ul> <p><b>Key Terms/Concepts:</b></p> <ul style="list-style-type: none"> <li>- Wetland</li> <li>- Plankton</li> <li>- Nekton</li> <li>- Benthos</li> </ul>	<p><b>Approved Text</b></p> <p><b>Project Wet Curriculum</b></p> <p><b>Labs:</b></p> <ul style="list-style-type: none"> <li>- Wetlands as “sponges” lab</li> <li>- Soda/Pop bottle aquaponics lab</li> </ul> <p><b>Chesapeake Bay Webquests</b></p>	<p><b>Teacher prepared tests, quizzes, etc.</b></p>	7-10 Days



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		<ul style="list-style-type: none"> <li>- Estuary</li> <li>- Eutrophication</li> <li>- Salt marsh</li> <li>- Mangrove swamp</li> <li>- Coral reef</li> <li>- Hypoxic zone</li> </ul>			
<b>Air / The Atmosphere</b>	<p><b>Pollution:</b> 4.5.10.C 4.5.12.C</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.6.11-12.B CC.3.6.11-12.E CC.3.6.11-12.F CC.3.6.11-12.G CC.3.6.11-12.H CC.3.6.11-12.I</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Name the primary air pollutants and their sources.</li> <li>- Describe the primary sources of air pollution in urban areas.</li> <li>- Describe the formation of smog.</li> <li>- Explain the relationship between a thermal inversion and air pollution.</li> <li>- Describe short-term and long-term effects of air pollution on human health.</li> <li>- Describe noise pollution and associated issues with both wildlife and human health.</li> <li>- Describe light pollution and associated issues with both wildlife and human health.</li> <li>- Explain the causes of acid precipitation and its Effects on plants, soils, and aquatic ecosystems.</li> <li>- Describe ways in which countries are working to solve the problem of acid precipitation.</li> </ul> <p><b>Key Terms/ Concepts:</b></p> <ul style="list-style-type: none"> <li>- Air pollution <ul style="list-style-type: none"> <li>o Primary pollutant</li> <li>o Secondary pollutant</li> </ul> </li> <li>- Smog</li> <li>- Temperature inversion</li> </ul>	<p><b>Approved Text</b></p> <p><b>Labs</b></p> <ul style="list-style-type: none"> <li>- Detecting Air Pollution.</li> <li>- Acid Precipitation</li> </ul> <p><b>Current Events Project:</b> Students find articles on current issues of air pollution and human health.</p>	<p><b>Teacher prepared tests, quizzes, etc.</b></p>	<p><b>4-6 Days</b></p>

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		<ul style="list-style-type: none"> <li>- Indoor air pollution               <ul style="list-style-type: none"> <li>o Sick-building syndrome</li> <li>o Asbestos</li> <li>o Volatile organic compounds (VOCs)</li> <li>o Asbestos</li> </ul> </li> <li>- Sound pollution</li> <li>- Decibel</li> <li>- Acid precipitation               <ul style="list-style-type: none"> <li>o pH</li> <li>o acid shock</li> </ul> </li> </ul>			
Climate Change	<p>Use of Natural Resources: 4.3.10.A 4.3.12.A</p> <p>Sustainability: 4.5.10.A 4.5.12.A</p> <p>Pollution: 4.5.10.C 4.5.12.C</p> <p>Common Core Reading and Writing: CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D</p>	<p>Objectives:</p> <ul style="list-style-type: none"> <li>- Explain the difference between weather and climate.</li> <li>- Identify factors that determine climate.</li> <li>- Explain how the ozone layer in shielding the Earth from the sun’s radiation.</li> <li>- Explain how chlorofluorocarbons damage the ozone layer. Describe the damaging effects of ultraviolet radiation.</li> <li>- Explain the greenhouse effect.</li> <li>- Analyze the trend of atmospheric CO<sub>2</sub>.</li> <li>- Assess the scientific argumentation that the Earth’s climate may be becoming warmer.</li> <li>- Describe the effects of increased global temperature.</li> <li>- Explain the ways in which atmospheric CO<sub>2</sub> can be reduced and the effects of global climate change ameliorated.</li> <li>- Examine the current legislation regarding climate change.</li> </ul>	<p>Approved Text</p> <p>Demonstration: Convection Currents</p> <p>Quicklab: Investigating Prevailing Winds</p> <p>Graphing: Students can graph precipitation or climate data to show trends.</p> <p>Lab: Demonstrate the greenhouse effect using bottles.</p>	Teacher prepared tests, quizzes, etc.	5-7 Days

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		<p><b>Key Terms/Concepts:</b></p> <ul style="list-style-type: none"> <li>- Climate</li> <li>- Latitude</li> <li>- Atmospheric circulation</li> <li>- Oceanic Circulation patterns             <ul style="list-style-type: none"> <li>○ Southern oscillation                 <ul style="list-style-type: none"> <li>▪ El Niño</li> <li>▪ La Niña</li> </ul> </li> <li>○ Pacific Decadal oscillation</li> </ul> </li> <li>- Ozone layer</li> <li>- Chlorofluorocarbons</li> <li>- Ozone</li> <li>- Polar stratospheric clouds</li> <li>- Greenhouse gases             <ul style="list-style-type: none"> <li>○ CO<sub>2</sub></li> <li>○ CFCs</li> <li>○ Methane</li> <li>○ Nitrous Oxide</li> <li>○ Water vapor</li> </ul> </li> <li>- Global warming/Climate change</li> <li>- Kyoto Protocol</li> <li>- UN Climate Change Summits</li> </ul>	<p><b>Current Event: Students can analyze the outcomes of the most recent legislation regarding climate change as well as the outcomes of international summits on climate change.</b></p>		
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<p><b>Land Use, Management and Conservation</b></p>	<p><b>Availability of Natural Resources:</b> 4.3.10.B 4.3.12.B</p> <p><b>Sustainability:</b> 4.5.10.A 4.5.12.A</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Distinguish between rural and urban land.</li> <li>- Describe the major ways in which humans use land.</li> <li>- Explain the concept of ecosystem services.</li> <li>- Describe the urban crisis and measures being taken to deal with it.</li> <li>- Explain what urban sprawl is and how it affects the environment.</li> <li>- Explain the heat-island effect.</li> <li>- Describe how people use the geographic information system as a tool for land-use planning.</li> <li>- Explain the benefits of preserving farmland.</li> <li>- Describe ways that rangeland can be managed sustainably.</li> <li>- Describe the effects of deforestation.</li> <li>- Explain the function of parks and wilderness areas.</li> </ul> <p><b>Key Terms/ Concepts:</b></p> <ul style="list-style-type: none"> <li>- Urban</li> <li>- Rural</li> <li>- Ecosystem services</li> <li>- Urbanization <ul style="list-style-type: none"> <li>o Infrastructure</li> <li>o Urban crisis</li> <li>o Urban sprawl</li> <li>o Marginal lands</li> <li>o Heat island</li> </ul> </li> </ul>	<p><b>Lab: Create a land use model given a map.</b></p> <p><b>Problem based research:</b> Ask students to research ideas and propose how to ameliorate the heat-island effect.</p> <p><b>Videos:</b></p> <ul style="list-style-type: none"> <li>- Any video on the history of the National Park System</li> <li>- Videos on deforestation. Students can then research fair trade items and other means to promote conservation.</li> </ul> <p><b>Speaker: Urban Forester</b></p>	<p><b>Teacher prepared tests, quizzes, etc.</b></p>	<p><b>7-10 Days</b></p>
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		<ul style="list-style-type: none"> <li>- Land-use planning             <ul style="list-style-type: none"> <li>○ Transportation</li> <li>○ Open space/Greenbelts</li> </ul> </li> <li>- Geographic information system</li> <li>- Rangeland</li> <li>- Conservation</li> <li>- Overgrazing</li> <li>- Forestry             <ul style="list-style-type: none"> <li>○ Deforestation</li> <li>○ Reforestation</li> <li>○ Gifford Pinchot</li> </ul> </li> <li>- Parks and Preserves             <ul style="list-style-type: none"> <li>○ Wilderness</li> <li>○ Parks                 <ul style="list-style-type: none"> <li>▪ National</li> <li>▪ State</li> <li>▪ County</li> <li>▪ Local</li> </ul> </li> <li>○ Theodore Roosevelt</li> </ul> </li> </ul>			
<b>QIII Agriculture</b>	<b>Food and Fiber System: 4.4.10.A 4.4.12.A</b>  <b>Importance of Agriculture: 4.4.10 B 4.4.12B</b>	<b>Objectives:</b> <ul style="list-style-type: none"> <li>- Identify the major causes of malnutrition.</li> <li>- Compare the environmental costs of producing different types of food.</li> <li>- Explain how food distribution problems and drought can lead to famine.</li> <li>- Explain the importance of the green revolution.</li> <li>- Distinguish between traditional and modern agriculture techniques.</li> <li>- Describe fertile soil.</li> </ul>	<b>Labs:</b> <ul style="list-style-type: none"> <li>- Effects of excess fertilizers.</li> <li>- Soil testing</li> </ul>	<b>Teacher prepared tests, quizzes, etc.</b>	<b>10-12 Days</b>

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	<p><b>Applying Sciences to Agriculture:</b> 4.4.10.C 4.4.12.C</p> <p><b>Technology Influences on Agriculture:</b> 4.4.10.D 4.4.12.D</p> <p><b>Integrated Pest Management:</b> 4.5.10.B 4.5.12.B</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D</p>	<ul style="list-style-type: none"> <li>- Describe the need for soil conservation.</li> <li>- Explain the benefits and environmental impacts of pesticide use.</li> <li>- Explain what is meant and what is involved in integrated pest management.</li> <li>- Explain how genetic engineering is used in agriculture.</li> <li>- Explain how overharvesting affects the supply of aquatic organisms used for food.</li> <li>- Describe the current role of aquaculture in providing seafood.</li> <li>- Describe the importance of livestock in providing food and other products.</li> <li>- Describe how industrial-scale livestock operations can adversely affect the environment.</li> </ul> <p><b>Key Terms/Concepts:</b></p> <ul style="list-style-type: none"> <li>- Nutrition <ul style="list-style-type: none"> <li>o Famine</li> <li>o Malnutrition</li> </ul> </li> <li>- Food efficiency <ul style="list-style-type: none"> <li>o Yield</li> </ul> </li> <li>- Food Problems <ul style="list-style-type: none"> <li>o Unequal distribution</li> <li>o Droughts and famine</li> </ul> </li> <li>- Green revolution <ul style="list-style-type: none"> <li>o Industrial farming</li> <li>o Subsistence farming</li> </ul> </li> <li>- Arable land</li> <li>- Agriculture <ul style="list-style-type: none"> <li>o Traditional</li> <li>o Modern</li> <li>o Irrigation methods</li> </ul> </li> </ul>	<p><b>Activity: Food? What food?</b></p> <p><b>Projects:</b></p> <ul style="list-style-type: none"> <li>- Students can use soda bottles to model aquaculture.</li> <li>- Students can be challenged to come up with ways of producing food in urban settings.</li> <li>- Students can research the term “organic” and its use with respect to foods.</li> <li>- Students can debate about the growth of GM foods and labeling issues.</li> </ul>		
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		<ul style="list-style-type: none"><li>- <b>Soil</b><ul style="list-style-type: none"><li>○ <b>Topsoil</b></li><li>○ <b>Surface litter</b></li><li>○ <b>Zone of leaching</b></li><li>○ <b>Subsoil</b></li><li>○ <b>Rock particles</b></li><li>○ <b>Bedrock</b></li></ul></li><li>- <b>Erosion</b></li><li>- <b>Land degradation</b><ul style="list-style-type: none"><li>○ <b>Desertification</b></li><li>○ <b>Fallow</b></li><li>○ <b>Salinization</b></li></ul></li><li>- <b>Soil conservation</b><ul style="list-style-type: none"><li>○ <b>Contour plowing</b></li><li>○ <b>No-till farming</b></li><li>○ <b>Composting</b></li></ul></li><li>- <b>Pest Control</b><ul style="list-style-type: none"><li>○ <b>Pest</b></li><li>○ <b>Pesticides</b></li><li>○ <b>Pesticide resistance</b></li><li>○ <b>Pollution and persistence</b></li><li>○ <b>Biological Pest Control</b><ul style="list-style-type: none"><li>▪ <b>Pathogens</b></li><li>▪ <b>Plant defenses</b></li><li>▪ <b>Plant derived chemicals</b></li><li>▪ <b>Growth regulators</b></li><li>▪ <b>Pheromones</b></li></ul></li><li>○ <b>Integrated pest management</b></li><li>○ <b>Genetic engineering</b><ul style="list-style-type: none"><li>▪ <b>GM/GMO crops</b></li></ul></li></ul></li></ul>			
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		<ul style="list-style-type: none"> <li>- Sustainable agriculture</li> <li>- Domestication</li> <li>- Aquaculture <ul style="list-style-type: none"> <li>○ Overharvesting</li> <li>○ Fish farm</li> <li>○ Ranch</li> <li>○ Disruption of wetlands</li> </ul> </li> <li>- Livestock <ul style="list-style-type: none"> <li>○ Ruminants</li> <li>○ Poultry</li> <li>○ Industrial scale operations</li> <li>○ Waste pools</li> </ul> </li> </ul>			
<b>Mining and Minerals</b>	<b>Use of Natural Resources</b> 4.3.10.A 4.3.12.A  <b>Sustainability:</b> 4.5.10.A 4.5.12.A  <b>Pollution:</b> 4.5.10.C 4.5.12.C	<b>Objectives:</b> <ul style="list-style-type: none"> <li>- Define the term mineral.</li> <li>- Describe the manner in which mining companies explore for mineral deposits.</li> <li>- Describe methods of surface mining.</li> <li>- Describe placer deposits and explain how they are mined.</li> <li>- Describe the important environmental consequences of mining.</li> <li>- Name federal laws that relate to mining and reclaiming mined land.</li> <li>- Define reclamation.</li> <li>- Describe how governments regulate mining.</li> </ul> <b>Key Terms/Concepts</b> <ul style="list-style-type: none"> <li>- Mineral</li> <li>- Ore mineral <ul style="list-style-type: none"> <li>○ Metallic</li> <li>○ Nonmetallic</li> </ul> </li> </ul>	<b>Project:</b> Students can research acid mine drainage and its effect on the Lackawanna River. Samples can be taken directly from the borehole or ordered through EPCAMR.	<b>Teacher prepared tests, quizzes, etc.</b>	<b>5-7 Days</b>



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	<p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D</p>	<ul style="list-style-type: none"> <li>- Mineral Exploration</li> <li>- Subsurface mining             <ul style="list-style-type: none"> <li>o Longwall</li> <li>o Solution</li> </ul> </li> <li>- Surface mining             <ul style="list-style-type: none"> <li>o Surface coal mining</li> <li>o Quarrying</li> <li>o Solar evaporation</li> </ul> </li> <li>- Placer mining</li> <li>- Smelting</li> <li>- Undersea mining</li> <li>- Environmental impacts             <ul style="list-style-type: none"> <li>o Air pollution</li> <li>o Water contamination</li> <li>o Displacement</li> <li>o Erosion and sedimentation</li> <li>o Soil degradation</li> <li>o Subsidence</li> <li>o Mine fires</li> <li>o Acid mine drainage</li> </ul> </li> <li>- Mining regulation</li> <li>- Reclamation</li> </ul>			
<p><b>Nonrenewable Energy</b></p>	<p><b>Use of Natural Resources:</b> 4.3.10.A 4.3.12.A</p> <p><b>Sustainability:</b> 4.5.10.A 4.5.12.A</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- List factors that influence the value of a fuel.</li> <li>- Explain how fuels are used to generate electricity.</li> <li>- Identify patterns of energy consumption and production.</li> <li>- Explain how fossil fuels form and how they are used.</li> <li>- Compare the advantages and disadvantages of fossil fuel use.</li> </ul>	<p><b>Activity:</b> Fossil Fuel Extraction</p> <p><b>Project:</b> Research the pros and cons of shale fracking.</p>	<p><b>Teacher prepared tests, quizzes, etc.</b></p>	<p><b>5-7 Days</b></p>

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	<p><b>Pollution:</b> 4.5.10.C 4.5.12.C</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.6.11-12.B CC.3.6.11-12.E CC.3.6.11-12.F CC.3.6.11-12.G CC.3.6.11-12.H CC.3.6.11-12.I</p>	<ul style="list-style-type: none"> <li>- Describe how a nuclear power plant works.</li> <li>- Compare the advantages and disadvantages of nuclear power.</li> </ul> <p><b>Key Terms/ Concepts</b></p> <ul style="list-style-type: none"> <li>- Fossil fuels</li> <li>- Electric generator</li> <li>- Energy use             <ul style="list-style-type: none"> <li>o World patterns</li> <li>o US patterns</li> </ul> </li> <li>- Fossil-fuel deposit             <ul style="list-style-type: none"> <li>o Coal</li> <li>o Oil</li> <li>o Natural gas</li> </ul> </li> <li>- Petroleum             <ul style="list-style-type: none"> <li>o Oil deposit</li> <li>o Oil spill</li> <li>o Predicting oil production</li> </ul> </li> <li>- Nuclear energy             <ul style="list-style-type: none"> <li>o Nuclear fission</li> <li>o Nuclear power plant</li> <li>o Nuclear waste</li> <li>o Radiation</li> </ul> </li> </ul>			
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<p><b>Renewable Energy</b></p>	<p><b>Use of Natural Resources</b> 4.3.10.A 4.3.12.A</p> <p><b>Sustainability:</b> 4.5.10.A 4.5.12.A</p> <p><b>Pollution:</b> 4.5.10.C 4.5.12.C</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.6.11-12.B CC.3.6.11-12.E CC.3.6.11-12.F CC.3.6.11-12.G CC.3.6.11-12.H CC.3.6.11-12.I</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- List forms of renewable energy and compare their advantages and disadvantages.</li> <li>- Describe the differences between passive solar heating, active solar heating, and photovoltaic energy.</li> <li>- Describe the current state of wind energy technology.</li> <li>- Explain the differences in biomass fuel use between developed and developing nations.</li> <li>- Describe how hydroelectric energy, geothermal energy, and geothermal heat pumps work.</li> <li>- Explain current alternative energy technologies.</li> <li>- Identify how hydrogen can be used as a fuel source.</li> <li>- Explain the difference between energy efficiency and energy conservation.</li> <li>- Describe forms of energy efficient transportation.</li> <li>- Identify ways to conserve energy in daily life.</li> </ul> <p><b>Key Terms/Concepts:</b></p> <ul style="list-style-type: none"> <li>- Renewable energy</li> <li>- Solar energy             <ul style="list-style-type: none"> <li>o Active</li> <li>o Passive</li> <li>o Photovoltaic cells</li> </ul> </li> <li>- Biomass fuels             <ul style="list-style-type: none"> <li>o Methane</li> <li>o Alcohol</li> </ul> </li> <li>- Hydroelectric energy</li> </ul>	<p><b>Approved text.</b></p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Conserve a Watt</li> <li>- Catch the Sun</li> <li>- Build a Solar Cooker</li> <li>- Biofuels</li> <li>- Energy Alternatives</li> </ul> <p>Students can use photovoltaic cells and other lab equipment to explore alternative forms of producing energy.</p> <p>Lab: Students can be given the challenge of using common materials to make a water wheel or wind turbine.</p>	<p><b>Teacher prepared tests, quizzes, etc.</b></p>	<p><b>10-12 Days</b></p>
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		<ul style="list-style-type: none"> <li>- Geothermal energy <ul style="list-style-type: none"> <li>o Geothermal heat pumps</li> </ul> </li> <li>- Alternative energy <ul style="list-style-type: none"> <li>o Tidal</li> <li>o Ocean thermal</li> <li>o Hydrogen <ul style="list-style-type: none"> <li>▪ Fuel cell</li> </ul> </li> </ul> </li> <li>- Energy efficiency <ul style="list-style-type: none"> <li>o Transportation</li> <li>o Cogeneration</li> <li>o Energy conservation</li> </ul> </li> </ul>	<b>Labs:</b> <ul style="list-style-type: none"> <li>- Construction of a solar cooker.</li> <li>- Modeling various forms of wind turbines.</li> </ul>		
<b>QIV: Waste Management</b>	<b>Waste Management: 4.3.10.D 4.3.12.D</b>  <b>Common Core Reading and Writing: CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D</b>	<b>Objectives:</b> <ul style="list-style-type: none"> <li>- Describe biodegradable materials.</li> <li>- Identify types of solid waste.</li> <li>- Describe how landfills work and the environmental problems caused by landfills.</li> <li>- Identify ways to reduce wastes.</li> <li>- Describe how materials are recycled.</li> <li>- Describe composting and its benefits.</li> <li>- Compare the advantages and disadvantages of biodegradable plastics.</li> <li>- Describe the characteristics of hazardous wastes.</li> <li>- Describe and analyze laws that govern hazardous wastes.</li> <li>- Describe and analyze the ways in which hazardous wastes are disposed of.</li> </ul>	<b>Approved text</b>  <b>Activities:</b> <ul style="list-style-type: none"> <li>- Students can bring materials in to compost to look at decomposition rates.</li> <li>- Students can make a public service project promoting recycling in the school/ community.</li> </ul>	<b>Teacher prepared tests, quizzes, etc.</b>	<b>8-10 Days</b>

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		<p><b>Key Terms/ Concepts:</b></p> <ul style="list-style-type: none"> <li>- <b>Solid waste</b> <ul style="list-style-type: none"> <li>○ <b>Municipal</b></li> <li>○ <b>Manufacturing, mining, and agriculture</b></li> </ul> </li> <li>- <b>Solid waste management</b> <ul style="list-style-type: none"> <li>○ <b>Landfills</b> <ul style="list-style-type: none"> <li>▪ <b>Leachate</b></li> </ul> </li> <li>○ <b>Incinerators</b></li> <li>○ <b>Biodegradable</b></li> <li>○ <b>Plastics</b> <ul style="list-style-type: none"> <li>▪ <b>Photodegradable</b></li> <li>▪ <b>Green plastic</b></li> </ul> </li> </ul> </li> <li>- <b>Source reduction</b></li> <li>- <b>Recycling</b></li> <li>- <b>Composting</b></li> <li>- <b>Hazardous waste</b></li> <li>- <b>Resource Conservation and Recovery Act</b></li> <li>- <b>The Superfund Act</b></li> <li>- <b>Hazardous waste management</b> <ul style="list-style-type: none"> <li>○ <b>Deep-well injection</b></li> <li>○ <b>Surface impoundment</b></li> <li>○ <b>Biological treatments</b></li> <li>○ <b>Incineration</b></li> <li>○ <b>Exportation</b></li> </ul> </li> </ul>	<p><b>Research: Students can look up information on local Superfund Sites.</b></p>		
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<p><b>The Environment and Human Health</b></p>	<p><b>Human Health Issues:</b> 4.5.10.E 4.5.12.E</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.6.11-12.B CC.3.6.11-12.E CC.3.6.11-12.F CC.3.6.11-12.G CC.3.6.11-12.H</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Explain how scientists use toxicology and epidemiology.</li> <li>- Explain how pollution can come from both natural sources and human activities.</li> <li>- Describe the relationship between waste, pollution, and human health.</li> <li>- Explain why the environment is an important factor in the spread of diseases.</li> <li>- Explain what is meant by emerging diseases.</li> </ul> <p><b>Key Terms/Concepts:</b></p> <ul style="list-style-type: none"> <li>- Toxicology             <ul style="list-style-type: none"> <li>o Dose</li> <li>o Dose-response curve</li> </ul> </li> <li>- Epidemiology</li> <li>- Risk assessment</li> <li>- Pollution             <ul style="list-style-type: none"> <li>o Particulates</li> <li>o Heavy metals</li> <li>o Burning fuels</li> <li>o Pesticides</li> <li>o Industrial chemicals</li> </ul> </li> <li>- Pathogen             <ul style="list-style-type: none"> <li>o Vector</li> <li>o Host</li> </ul> </li> <li>- Waterborne disease             <ul style="list-style-type: none"> <li>o Cholera</li> <li>o Malaria</li> </ul> </li> <li>- Antibiotic resistance</li> <li>- Emerging viruses             <ul style="list-style-type: none"> <li>o Cross-species transfers</li> </ul> </li> </ul>	<p><b>Approved text</b></p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Toxins in the Home</li> <li>- Students can research and present on a particular pollution type and the health effects they have.</li> </ul> <p><b>Lab: Epidemiology – analyze the movement of a particular pathogen, tracing it to its source.</b></p>	<p><b>Teacher prepared tests, quizzes, etc.</b></p>	<p><b>10-12 Days</b></p>
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Curriculum Guide

<p><b>Economics and Policy</b></p>	<p><b>Use of Natural Resources:</b> 4.3.10A 4.3.12A</p> <p><b>Sustainability:</b> 4.5.10.A 4.5.12.A</p> <p><b>Common Core Reading and Writing:</b> CC.3.5.11-12.B CC.3.5.11-12.C CC.3.5.11-12.D CC.3.6.11-12.B CC.3.6.11-12.E CC.3.6.11-12.F CC.3.6.11-12.G CC.3.6.11-12.H</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Describe some of the challenges to achieving sustainability.</li> <li>- Describe several major international meetings and agreements relating to the environment.</li> <li>- Explain how economics and environmental science are related.</li> <li>- Identify examples of private efforts to address environmental problems.</li> <li>- Describe the major developments in U.S. environmental history.</li> <li>- Describe the federal agencies that have environmental responsibilities.</li> <li>- Give examples of how citizens can impact environmental policy.</li> <li>- Evaluate the media as a source of information about the environment.</li> </ul> <p><b>Key Terms/Objectives:</b></p> <ul style="list-style-type: none"> <li>- Sustainability</li> <li>- Globalization             <ul style="list-style-type: none"> <li>o International cooperation</li> <li>o Sustainable development</li> <li>o Climate and atmosphere</li> </ul> </li> <li>- Economics (in relation to the environment)</li> <li>- Regulation and economic incentives</li> <li>- Private efforts</li> </ul>	<p><b>Approved text</b></p> <p><b>Webquest: U.S. Agencies</b> – have students explore and report on the particular agency and its responsibilities.</p> <p><b>Google Maps</b> – Find and explore parks on Google Maps</p>	<p><b>Teacher prepared tests, quizzes, etc.</b></p>	<p><b>8-10 Days</b></p>
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		<ul style="list-style-type: none"> <li>- <b>U.S. Environmental Policy</b> <ul style="list-style-type: none"> <li>○ Theodore Roosevelt</li> <li>○ Environmental Protection Agency</li> <li>○ Department of the Interior</li> <li>○ Department of Agriculture</li> <li>○ Department of Commerce</li> <li>○ Nuclear Regulatory Commission</li> <li>○ Department of Energy</li> </ul> </li> <li>- <b>Environmental impact statements</b></li> <li>- <b>Unfunded mandates</b></li> <li>- <b>Roles of local and state governments</b> <ul style="list-style-type: none"> <li>○ Lobbying</li> </ul> </li> <li>- <b>Media (source bias)</b></li> </ul>	<p><b>Projects:</b> Have students research a community project or create a project for a need they see in their community.</p> <p><b>Research:</b> Present or have students find examples of bias in the news with respect to environmental issues and have the students analyze and verify information.</p>		
<b>Review and Final Exam</b>			<b>District approved final</b>		<b>10 Days</b>