

**Inquiry Investigations™**  
**Environmental Issues and Solutions MODULE - 1287226**  
**Grades: 7-10**

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**Alabama Courses of Study**  
**Science**  
**Grade 7**

STANDARD	AL. 1.	Life Science - Students will:
OBJECTIVE	1.1.	Describe characteristics common to living things, including growth and development, reproduction, cellular organization, use of energy, exchange of gases, and response to the environment. <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> </ul>
OBJECTIVE	1.1.b.	Additional Minimum Content: Predicting how an organism's behavior impacts the environment <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	1.1.c.	Additional Minimum Content: Identifying unicellular organisms, including bacteria and protists, by their methods of locomotion, reproduction, ingestion, excretion, and effects on other organisms <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> </ul>

		<ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	1.2.	<p>Identify functions of organelles found in eukaryotic cells, including the nucleus, cell membrane, cell wall, mitochondria, chloroplasts, and vacuoles. Example: mitochondria releasing energy for use in cellular respiration</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	1.2.a.	<p>Additional Minimum Content: Identifying components of the cell theory</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	1.3.	<p>Relate major tissues and organs of the skeletal, circulatory, reproductive, muscular, respiratory, nervous, and digestive systems to their functions.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	1.4.	<p>Describe organisms in the six-kingdom classification system by their characteristics.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	1.4.a.	<p>Additional Minimum Content: Recognizing genus and species as components of a scientific name</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	1.4.b.	<p>Additional Minimum Content: Identifying contributions of Aristotle and Linnaeus to the early history of taxonomy</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	1.5.	<p>Identify major differences between plants and animals, including internal</p>

		<p>structures, external structures, methods of locomotion, methods of reproduction, and stages of development.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> </ul>
OBJECTIVE	1.5.a.	<p>Additional Minimum Content: Describing the processes of photosynthesis and cellular respiration</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	1.7.	<p>Describe biotic and abiotic factors in the environment. Examples: biotic - plants, animals; abiotic - climate, water, soil</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	1.7.a.	<p>Additional Minimum Content: Classifying organisms as autotrophs or heterotrophs</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	1.7.b.	<p>Additional Minimum Content: Arranging the sequence of energy flow in an ecosystem through food webs, food chains, and energy pyramids</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>

OBJECTIVE	1.10.a.	<p>Additional Minimum Content: Identifying Watson and Crick as scientists who discovered the shape of the DNA molecule</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>
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**Alabama Courses of Study  
Science  
Grade 8**

STANDARD	AL.1.	Physical Science - Students will:
OBJECTIVE	1.1.b.	<p>Additional Minimum Content: Identifying controls and variables in a scientific investigation</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> </ul>
OBJECTIVE	1.1.e.	<p>Additional Minimum Content: Identifying appropriate laboratory glassware, balances, time measuring equipment, and optical instruments used to conduct an investigation</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> </ul>

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
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**Alabama Courses of Study  
Science  
Grade 9**

STANDARD	AL. 1.	Physical Science Core - Students will:
OBJECTIVE	1.5.	Describe physical and chemical changes in terms of endothermic and exothermic processes. <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
OBJECTIVE	1.8.a.	Additional Minimum Content: Identifying the relationship between thermal energy and the temperature of a sample of matter <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> </ul>
OBJECTIVE	1.8.b.	Additional Minimum Content: Describing the flow of thermal energy between two samples of matter <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> </ul>
OBJECTIVE	1.8.c.	Additional Minimum Content: Explaining how thermal energy is transferred by radiation, conduction, and convection <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> </ul>
OBJECTIVE	1.9.	Compare methods of energy transfer by mechanical and electromagnetic

		<p>waves.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	1.12.	<p>Identify metric units for mass, distance, time, temperature, velocity, acceleration, density, force, energy, and power.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
STANDARD	AL.2.	<b>Biology Core - Students will:</b>
OBJECTIVE	2.1.	<p>Select appropriate laboratory glassware, balances, time measuring equipment, and optical instruments to conduct an experiment.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3:</li> </ul>

		<p>Constructing a Predator-Prey Food Web</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	2.1.c.	<p>Additional Minimum Content: Identifying safe laboratory procedures when handling chemicals and using Bunsen burners and laboratory glassware</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2:</li> </ul>

		<p>Identifying Owl Prey</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	2.2.c.	<p>Additional Minimum Content: Explaining how surface area, cell size, temperature, light, and pH affect cellular activities</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> </ul>
OBJECTIVE	2.3.	<p>Identify reactants and products associated with photosynthesis and cellular respiration and the purposes of these two processes.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	2.4.a.	<p>Additional Minimum Content: Identifying scientists who contributed to the cell theory. Examples: Hooke, Schleiden, Schwann, Virchow, van Leeuwenhoek</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	2.4.c.	<p>Additional Minimum Content: Identifying various technologies used to observe cells. Examples: light microscope, scanning electron microscope, transmission electron microscope</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> </ul>

		<ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	2.5.	<p>Identify cells, tissues, organs, organ systems, organisms, populations, communities, and ecosystems as levels of organization in the biosphere.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	2.8.a.	<p>Additional Minimum Content: Explaining relationships among DNA, genes, and chromosomes</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>
OBJECTIVE	2.8.c.	<p>Additional Minimum Content: Relating normal patterns of genetic inheritance to genetic variation. Example: crossing-over</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>
OBJECTIVE	2.8.d.	<p>Additional Minimum Content: Relating ways chance, mutagens, and genetic engineering increase diversity. Examples: insertion, deletion, translocation, inversion, recombinant DNA</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>
OBJECTIVE	2.9.	<p>Differentiate between the previous five-kingdom and current six-kingdom classification systems.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	2.9.a.	<p>Additional Minimum Content: Sequencing taxa from most inclusive to least inclusive in the classification of living things</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	2.9.c.	<p>Additional Minimum Content: Identifying ways in which organisms from the Monera, Protista, and Fungi kingdoms are beneficial and harmful. Examples: beneficial - decomposers, harmful - diseases</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	2.9.e.	<p>Additional Minimum Content: Writing scientific names accurately by using binomial nomenclature</p>

		<ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	2.10.b.	<p>Additional Minimum Content: Recognizing chemical and physical adaptations of plants. Examples: chemical - foul odor, bitter taste, toxicity; physical - spines, needles, broad leaves</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> </ul>
OBJECTIVE	2.11.	<p>Classify animals according to type of skeletal structure, method of fertilization and reproduction, body symmetry, body coverings, and locomotion. Examples: skeletal structure - vertebrates, invertebrates; fertilization - external, internal; reproduction - sexual, asexual; body symmetry - bilateral, radial, asymmetrical; body coverings - feathers, scales, fur; locomotion - cilia, flagella, pseudopodia</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	2.13.	<p>Trace the flow of energy as it decreases through the trophic levels from producers to the quaternary level in food chains, food webs, and energy pyramids.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	2.13.a.	<p>Additional Minimum Content: Describing the interdependence of biotic and abiotic factors in an ecosystem. Examples: effects of humidity on stomata size, effects of dissolved oxygen on fish respiration</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	2.13.b.	<p>Additional Minimum Content: Contrasting autotrophs and heterotrophs</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>

		<ul style="list-style-type: none"> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	2.13.c.	<p>Additional Minimum Content: Describing the niche of decomposers</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> <li>Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	2.13.d.	<p>Additional Minimum Content: Using the ten percent law to explain the decreasing availability of energy through the trophic levels</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	2.14.	<p>Trace biogeochemical cycles through the environment, including water, carbon, oxygen, and nitrogen.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>Teacher Resource CD: Air, Water, and Soils</li> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	2.14.a.	<p>Additional Minimum Content: Relating natural disasters, climate changes, nonnative species, and human activity to the dynamic equilibrium of ecosystems. Examples: natural disasters - habitat destruction resulting from tornadoes; climate changes - changes in migratory patterns of birds; nonnative species - exponential growth of kudzu and Zebra mussels due to absence of natural controls; human activity - habitat destruction resulting in reduction of biodiversity, conservation resulting in preservation of biodiversity</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	2.15.	<p>Identify biomes based on environmental factors and native organisms. Example: tundra - permafrost, low humidity, lichens, polar bears</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> </ul>
OBJECTIVE	2.16.a.	<p>Additional Minimum Content: Discriminating among symbiotic relationships, including mutualism, commensalism, and parasitism</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
STANDARD	AL.3.	<b>Chemistry Core - Students will:</b>
OBJECTIVE	3.1.	<p>Differentiate among pure substances, mixtures, elements, and compounds.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> </ul>
OBJECTIVE	3.4.	<p>Describe solubility in terms of energy changes associated with the solution process.</p>

		<ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> </ul>
OBJECTIVE	3.4.c.	<p>Additional Minimum Content: Describing acids and bases in terms of strength, concentration, pH, and neutralization reactions</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> </ul>
OBJECTIVE	3.8.	<p>Distinguish among endothermic and exothermic physical and chemical changes. Examples: endothermic physical - phase change from ice to water, endothermic chemical - reaction between citric acid solution and baking soda, exothermic physical - phase change from water vapor to water, exothermic chemical - formation of water from combustion of hydrogen and oxygen</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
STANDARD	AL.4.	Physics Core - Students will:
OBJECTIVE	4.5.a.	<p>Additional Minimum Content: Using qualitative and quantitative methods to show the relationship between changes in heat energy and changes in temperature</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> </ul>
STANDARD	AL.5.	Aquascience Elective Core - Students will:
OBJECTIVE	5.1.	<p>Differentiate among freshwater, brackish water, and saltwater ecosystems.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	5.1.a.	<p>Additional Minimum Content: Identifying chemical, geological, and physical features of aquatic ecosystems</p>

		<ul style="list-style-type: none"> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	5.2.	<p>Relate geological and hydrological phenomena and fluid dynamics to aquatic systems.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	5.4.a.	<p>Additional Minimum Content: Describing the influence of water quality on aquaculture. Examples: aquatic plant control, water quality management, recognition and correction of oxygen deficiency, pH control</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>Teacher Resource CD: Air, Water, and Soils</li> <li>Teacher Resource CD: Environmental Issues</li> <li>Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	5.4.b.	<p>Additional Minimum Content: Identifying sources of aquatic pollution. Examples: point and nonpoint pollution, volcanic ash, waste disposal</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4:</li> </ul>

		<p>Observing the Effects of Acid Rain and Other Pollutants on Plants</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	5.7.	<p>Describe processes and environmental characteristics that affect growth rates of aquatic animals. Examples: reproductive habits, feeding habits, interdependence of organisms, overcrowding, seasonal changes</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
STANDARD	AL.6.	<b>Botany Elective Core - Students will:</b>
OBJECTIVE	6.5.	<p>Identify types of roots, stems, and leaves. Examples: roots - tap, fibrous; stems - herbaceous, woody; leaves - simple, compound</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> </ul>
OBJECTIVE	6.6.	<p>Explain the importance of soil type, texture, and nutrients to plant growth.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> </ul>

		<ul style="list-style-type: none"> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	6.7.	<p>Explain plant cell processes, including light dependent and light independent reactions of photosynthesis, glycolysis, aerobic and anaerobic respiration, and transport.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Teacher Resource CD: Air, Water, and Soils</li> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	6.10.a.	<p>Additional Minimum Content: Describing seed germination, development, and dispersal</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> </ul>
STANDARD	AL.7.	<b>Earth and Space Science Elective Core - Students will:</b>
OBJECTIVE	7.1.	<p>Describe sources of energy, including solar, gravitational, geothermal, and nuclear.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	7.2.	<p>Describe effects on weather of energy transfer within and among the atmosphere, hydrosphere, biosphere, and lithosphere.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	7.2.a.	<p>Additional Minimum Content: Describing the energy transfer related to condensation in clouds, precipitation, winds, and ocean currents</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	7.4.b.	<p>Additional Minimum Content: Describing how the reception of solar radiation is affected by atmospheric and lithospheric conditions. Example: volcanic eruptions and greenhouse gases affecting reflection and absorption of solar radiation</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> </ul>

		<ul style="list-style-type: none"> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
<b>STANDARD</b>	<b>AL.8.</b>	<b>Environmental Science Elective Core - Students will:</b>
<b>OBJECTIVE</b>	<b>8.1.</b>	<p>Identify the influence of human population, technology, and cultural and industrial changes on the environment.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> </ul>

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	8.1.a.	<p>Additional Minimum Content: Describing the relationship between carrying capacity and population size</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	8.2.	<p>Evaluate various fossil fuels for their effectiveness as energy resources.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.2.a.	<p>Additional Minimum Content: Describing the formation and use of nonrenewable fossil fuels</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.2.b.	<p>Additional Minimum Content: Identifying by-products of the combustion of fossil fuels, including particulates, mercury, sulfur dioxide, nitrogen dioxide, and carbon dioxide</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.2.c.	<p>Additional Minimum Content: Identifying chemical equations associated with</p>

		<p>the combustion of fossil fuels</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.2.d.	<p>Additional Minimum Content: Describing benefits of abundant, affordable energy to mankind</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.2.e.	<p>Additional Minimum Content: Identifying effects of fossil fuel by-products on the environment, including ozone depletion; formation of acid rain, brown haze, and greenhouse gases; and concentration of particulates and heavy metals</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.3.e.	<p>Additional Minimum Content: Identifying ways the law of conservation of energy relates to fuel consumption. Examples: development of hybrid cars, construction of energy-efficient homes</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.4.	<p>Identify the impact of pollutants on the atmosphere.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> </ul>

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	8.4.a.	<p>Additional Minimum Content: Identifying layers of the atmosphere and the composition of air</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	8.4.b.	<p>Additional Minimum Content: Describing the formation of primary, secondary, and indoor air pollutants</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	8.4.c.	<p>Additional Minimum Content: Relating pollutants to smog and thermal inversions</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	8.5.	<p>Describe properties of water that make it a universal solvent.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
OBJECTIVE	8.6.a.	<p>Additional Minimum Content: Determining the quality of fresh water using chemical testing and bioassessment</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1:</li> </ul>

		<p>Modeling a Water Treatment Plant</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	8.6.b.	<p>Additional Minimum Content: Describing the use of chemicals and microorganisms in water treatment</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	8.7.	<p>Identify reasons coastal waters serve as an important resource. Examples: economic stability, biodiversity, recreation</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> </ul>
OBJECTIVE	8.7.a.	<p>Additional Minimum Content: Classifying biota of estuaries, marshes, tidal pools, wetlands, beaches, and inlets</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> </ul>
OBJECTIVE	8.7.b.	<p>Additional Minimum Content: Comparing components of marine water to components of inland bodies of water</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3:</li> </ul>

		<p>Determining the LD50 of a Water Pollutant</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	8.8.	<p>Identify major contaminants in water resulting from natural phenomena, homes, industry, and agriculture.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	8.8.a.	<p>Additional Minimum Content: Describing the eutrophication of water by industrial effluents and agricultural runoffs</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	8.8.b.	<p>Additional Minimum Content: Classifying sources of water pollution as point</p>

		<p>and nonpoint</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	8.9.a.	<p>Additional Minimum Content: Defining various types and sources of waste and their impact on the soil. Examples: types - biodegradable, nonbiodegradable, organic, radioactive, nonradioactive; sources - pesticides, herbicides</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.9.b.	<p>Additional Minimum Content: Identifying ways to manage waste, including composting, recycling, reusing, and reclaiming</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.10.	<p>Describe the composition of soil profiles and soil samples of varying climates.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil</li> </ul>

		<p>Porosity and Permeability</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	8.10.a.	<p>Additional Minimum Content: Identifying various processes and activities that promote soil formation. Examples: weathering, decomposition, deposition</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
OBJECTIVE	8.10.b.	<p>Additional Minimum Content: Relating particle size to soil texture and type of sand, silt, or clay</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	8.11.a.	<p>Additional Minimum Content: Describing methods for preventing soil erosion. Examples: planting vegetation, constructing terraces, providing barriers</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.12.	<p>Identify positive and negative effects of human activities on biodiversity.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> </ul>

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<b>STANDARD</b>	<b>AL.9.</b>	<b>Forensic Science Elective Core - Students will:</b>
<b>OBJECTIVE</b>	<b>9.8.</b>	Describe general categories of drugs and poisons and their effects on humans. <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<b>OBJECTIVE</b>	<b>9.8.a.</b>	Additional Minimum Content: Explaining ways poisons are detected at autopsy <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4:</li> </ul>

		<p>Observing the Effects of Acid Rain and Other Pollutants on Plants</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<b>STANDARD</b>	<b>AL.10.</b>	<b>Genetic Elective Core - Students will:</b>
<b>OBJECTIVE</b>	<b>10.2.</b>	<p>Describe factors such as radiation, chemicals, and chance that cause mutations in populations.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>
<b>OBJECTIVE</b>	<b>10.2.a.</b>	<p>Additional Minimum Content: Describing effects of genetic variability on adaptations</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>
<b>OBJECTIVE</b>	<b>10.7.a.</b>	<p>Additional Minimum Content: Applying the genetic code to predict amino acid sequence</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>
<b>STANDARD</b>	<b>AL.11.</b>	<b>Geology Elective Core - Students will:</b>
<b>OBJECTIVE</b>	<b>11.1.</b>	<p>Describe Earth's layers, including the lithosphere, asthenosphere, outer core, and inner core.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
<b>OBJECTIVE</b>	<b>11.1.a.</b>	<p>Additional Minimum Content: Identifying methods for determining the composition of Earth's lithosphere. Example: collection and analysis of rocks and minerals</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
<b>OBJECTIVE</b>	<b>11.9.</b>	<p>Describe the movement and storage of water in terms of watersheds, rainfall, surface runoff, aquifers, and surface water reservoirs.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
<b>OBJECTIVE</b>	<b>11.13.a.</b>	<p>Additional Minimum Content: Explaining the formation of alluvial fans</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
<b>OBJECTIVE</b>	<b>11.14.</b>	<p>Explain the interaction of the continuous processes of waves, tides, and winds with the coastal environment.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> </ul>

		<ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> </ul>
OBJECTIVE	11.14.a.	<p>Additional Minimum Content: Identifying the impact of periodic weather phenomena on coastal regions. Examples: hurricanes destroying sand dunes, El Nino or La Nina redefining shorelines</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> </ul>
OBJECTIVE	11.14.b.	<p>Additional Minimum Content: Identifying the positive and negative impact of humans on coastal regions. Examples: positive - shoreline protection, negative - buildings replacing protective dunes and barriers</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> </ul>
STANDARD	AL. 13.	Marine Science Elective Core - Students will:
OBJECTIVE	13.2.	<p>Differentiate among freshwater, brackish water, and saltwater.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	13.4.	<p>Recognize interactions between the atmosphere and the ocean.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	13.6.	<p>Describe components of major marine ecosystems, including estuaries, coral reefs, benthic communities, and open-ocean communities.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> </ul>

		<ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> </ul>
OBJECTIVE	13.8.	<p>Describe characteristics of marine plant and algae divisions.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	13.8.a.	<p>Additional Minimum Content: Describing commercial, economical, and medicinal values of marine plants and algae</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	13.9.	<p>Arrange various forms of marine life from most simple to most complex.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> </ul>
OBJECTIVE	13.9.a.	<p>Additional Minimum Content: Classifying marine organisms using binomial nomenclature</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	13.9.b.	<p>Additional Minimum Content: Identifying characteristics of ocean-drifting organisms. Examples: phytoplankton, zooplankton</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	13.9.c.	<p>Additional Minimum Content: Identifying characteristics of marine invertebrates. Examples: Protozoa, Porifera, Coelenterata, Arthropoda</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	13.9.d.	<p>Additional Minimum Content: Identifying characteristics of marine vertebrates. Examples: fishes, reptiles, birds, mammals</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> </ul>

OBJECTIVE	13.9.e.	Additional Minimum Content: Identifying characteristics of marine plants. Examples: algae, seaweed  <ul style="list-style-type: none"> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	13.10.	Describe the anatomy and physiology of representative aquatic organisms.  <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> </ul>
OBJECTIVE	13.10.a.	Additional Minimum Content: Identifying different aquatic species using dichotomous keys  <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	13.11.	Describe positive and negative effects of human influence on marine environments. Examples: positive - reef restoration, protection of endangered species; negative - pollution, overfishing  <ul style="list-style-type: none"> <li>Teacher Resource CD: Environmental Issues</li> </ul>
STANDARD	AL.14.	<b>Zoology Elective Core - Students will:</b>
OBJECTIVE	14.4.	Use taxonomic groupings to differentiate the structure and physiology of invertebrates with dichotomous keys.  <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	14.4.e.	Additional Minimum Content: Identifying examples, characteristics, and life cycles of Arthropoda  <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> </ul>
OBJECTIVE	14.5.	Use taxonomic groupings to differentiate structure and physiology of vertebrates with dichotomous keys.  <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> </ul>
OBJECTIVE	14.5.d.	Additional Minimum Content: Identifying examples and characteristics of Aves

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> </ul>
OBJECTIVE	14.5.e.	<p>Additional Minimum Content: Identifying examples and characteristics of Mammalia</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	14.6.	<p>Identify factors used to distinguish species, including behavioral differences and reproductive isolation.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	14.7.	<p>Explain how species adapt to changing environments to enhance survival and reproductive success, including changes in structure, behavior, or physiology. Examples: aestivation, thicker fur, diurnal activity</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	14.8.a.	<p>Additional Minimum Content: Identifying causative factors of decreasing population size. Examples: overcrowding resulting in greater incidence of disease, fire destroying habitat and food sources</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2:</li> </ul>

		<p>Biological Treatment of Pollution</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
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Alabama Courses of Study  
Science  
Grade 10

STANDARD	AL.1.	Physical Science Core - Students will:
OBJECTIVE	1.5.	<p>Describe physical and chemical changes in terms of endothermic and exothermic processes.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
OBJECTIVE	1.8.a.	<p>Additional Minimum Content: Identifying the relationship between thermal energy and the temperature of a sample of matter</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> </ul>
OBJECTIVE	1.8.b.	<p>Additional Minimum Content: Describing the flow of thermal energy between two samples of matter</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> </ul>
OBJECTIVE	1.8.c.	<p>Additional Minimum Content: Explaining how thermal energy is transferred by radiation, conduction, and convection</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> </ul>
OBJECTIVE	1.9.	<p>Compare methods of energy transfer by mechanical and electromagnetic waves.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	1.12.	<p>Identify metric units for mass, distance, time, temperature, velocity, acceleration, density, force, energy, and power.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
STANDARD	AL.2.	Biology Core - Students will:
OBJECTIVE	2.1.	<p>Select appropriate laboratory glassware, balances, time measuring equipment, and optical instruments to conduct an experiment.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1:</li> </ul>

		<p>Biodegradation in a Landfill</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	2.1.c.	Additional Minimum Content: Identifying safe laboratory procedures when handling chemicals and using Bunsen burners and laboratory glassware

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	2.2.c.	Additional Minimum Content: Explaining how surface area, cell size,

		<p>temperature, light, and pH affect cellular activities</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> </ul>
OBJECTIVE	2.3.	<p>Identify reactants and products associated with photosynthesis and cellular respiration and the purposes of these two processes.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Teacher Resource CD: Air, Water, and Soils</li> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	2.4.a.	<p>Additional Minimum Content: Identifying scientists who contributed to the cell theory. Examples: Hooke, Schleiden, Schwann, Virchow, van Leeuwenhoek</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	2.4.c.	<p>Additional Minimum Content: Identifying various technologies used to observe cells. Examples: light microscope, scanning electron microscope, transmission electron microscope</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	2.5.	<p>Identify cells, tissues, organs, organ systems, organisms, populations, communities, and ecosystems as levels of organization in the biosphere.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	2.8.	<p>Identify the structure and function of DNA, RNA, and protein.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>
OBJECTIVE	2.8.a.	<p>Additional Minimum Content: Explaining relationships among DNA, genes, and chromosomes</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>

OBJECTIVE	2.8.c.	<p>Additional Minimum Content: Relating normal patterns of genetic inheritance to genetic variation. Example: crossing-over</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>
OBJECTIVE	2.8.d.	<p>Additional Minimum Content: Relating ways chance, mutagens, and genetic engineering increase diversity. Examples: insertion, deletion, translocation, inversion, recombinant DNA</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>
OBJECTIVE	2.9.	<p>Differentiate between the previous five-kingdom and current six-kingdom classification systems.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	2.9.a.	<p>Additional Minimum Content: Sequencing taxa from most inclusive to least inclusive in the classification of living things</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	2.9.c.	<p>Additional Minimum Content: Identifying ways in which organisms from the Monera, Protista, and Fungi kingdoms are beneficial and harmful. Examples: beneficial - decomposers, harmful - diseases</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	2.9.e.	<p>Additional Minimum Content: Writing scientific names accurately by using binomial nomenclature</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	2.10.b.	<p>Additional Minimum Content: Recognizing chemical and physical adaptations of plants. Examples: chemical - foul odor, bitter taste, toxicity; physical - spines, needles, broad leaves</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> </ul>
OBJECTIVE	2.11.	<p>Classify animals according to type of skeletal structure, method of fertilization and reproduction, body symmetry, body coverings, and locomotion. Examples: skeletal structure - vertebrates, invertebrates;</p>

		<p>fertilization - external, internal; reproduction - sexual, asexual; body symmetry - bilateral, radial, asymmetrical; body coverings - feathers, scales, fur; locomotion - cilia, flagella, pseudopodia</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	2.13.	<p>Trace the flow of energy as it decreases through the trophic levels from producers to the quaternary level in food chains, food webs, and energy pyramids.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	2.13.a.	<p>Additional Minimum Content: Describing the interdependence of biotic and abiotic factors in an ecosystem. Examples: effects of humidity on stomata size, effects of dissolved oxygen on fish respiration</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	2.13.b.	<p>Additional Minimum Content: Contrasting autotrophs and heterotrophs</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>Teacher Resource CD: Air, Water, and Soils</li> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	2.13.c.	<p>Additional Minimum Content: Describing the niche of decomposers</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A</li> </ul>

		<p>Closer Look at Energy Pyramids</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	2.13.d.	<p>Additional Minimum Content: Using the ten percent law to explain the decreasing availability of energy through the trophic levels</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	2.14.	<p>Trace biogeochemical cycles through the environment, including water, carbon, oxygen, and nitrogen.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	2.14.a.	<p>Additional Minimum Content: Relating natural disasters, climate changes, nonnative species, and human activity to the dynamic equilibrium of ecosystems. Examples: natural disasters - habitat destruction resulting from tornadoes; climate changes - changes in migratory patterns of birds; nonnative species - exponential growth of kudzu and Zebra mussels due to absence of natural controls; human activity - habitat destruction resulting in reduction of biodiversity, conservation resulting in preservation of biodiversity</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> </ul>

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	2.15.	<p>Identify biomes based on environmental factors and native organisms. Example: tundra - permafrost, low humidity, lichens, polar bears</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> </ul>
OBJECTIVE	2.16.a.	<p>Additional Minimum Content: Discriminating among symbiotic relationships, including mutualism, commensalism, and parasitism</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
STANDARD	AL.3.	<b>Chemistry Core - Students will:</b>
OBJECTIVE	3.1.	<p>Differentiate among pure substances, mixtures, elements, and compounds.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> </ul>
OBJECTIVE	3.4.	<p>Describe solubility in terms of energy changes associated with the solution process.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> </ul>
OBJECTIVE	3.4.c.	<p>Additional Minimum Content: Describing acids and bases in terms of strength, concentration, pH, and neutralization reactions</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> </ul>
OBJECTIVE	3.8.	<p>Distinguish among endothermic and exothermic physical and chemical changes. Examples: endothermic physical - phase change from ice to water, endothermic chemical - reaction between citric acid solution and baking</p>

		<p>soda, exothermic physical - phase change from water vapor to water, exothermic chemical - formation of water from combustion of hydrogen and oxygen</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
<b>STANDARD</b>	<b>AL. 4.</b>	<b>Physics Core - Students will:</b>
<b>OBJECTIVE</b>	<b>4.5.a.</b>	<p>Additional Minimum Content: Using qualitative and quantitative methods to show the relationship between changes in heat energy and changes in temperature</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> </ul>
<b>STANDARD</b>	<b>AL. 5.</b>	<b>Aquascience Elective Core - Students will:</b>
<b>OBJECTIVE</b>	<b>5.1.</b>	<p>Differentiate among freshwater, brackish water, and saltwater ecosystems.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<b>OBJECTIVE</b>	<b>5.1.a.</b>	<p>Additional Minimum Content: Identifying chemical, geological, and physical features of aquatic ecosystems</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
<b>OBJECTIVE</b>	<b>5.2.</b>	<p>Relate geological and hydrological phenomena and fluid dynamics to aquatic systems.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>Virtual Laboratory: The Effect of Temperature on Dissolved</li> </ul>

		Oxygen
OBJECTIVE	5.4.a.	<p>Additional Minimum Content: Describing the influence of water quality on aquaculture. Examples: aquatic plant control, water quality management, recognition and correction of oxygen deficiency, pH control</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	5.4.b.	<p>Additional Minimum Content: Identifying sources of aquatic pollution. Examples: point and nonpoint pollution, volcanic ash, waste disposal</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	5.7.	<p>Describe processes and environmental characteristics that affect growth rates of aquatic animals. Examples: reproductive habits, feeding habits, interdependence of organisms, overcrowding, seasonal changes</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> </ul>

		<ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> <li>Teacher Resource CD: Environmental Issues</li> </ul>
<b>STANDARD</b>	<b>AL.6.</b>	<b>Botany Elective Core - Students will:</b>
<b>OBJECTIVE</b>	<b>6.5.</b>	<p>Identify types of roots, stems, and leaves. Examples: roots - tap, fibrous; stems - herbaceous, woody; leaves - simple, compound</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> </ul>
<b>OBJECTIVE</b>	<b>6.6.</b>	<p>Explain the importance of soil type, texture, and nutrients to plant growth.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
<b>OBJECTIVE</b>	<b>6.7.</b>	<p>Explain plant cell processes, including light dependent and light independent reactions of photosynthesis, glycolysis, aerobic and anaerobic respiration, and transport.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>Teacher Resource CD: Air, Water, and Soils</li> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
<b>OBJECTIVE</b>	<b>6.10.a.</b>	<p>Additional Minimum Content: Describing seed germination, development, and dispersal</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4:</li> </ul>

		Observing the Effects of Acid Rain and Other Pollutants on Plants
<b>STANDARD</b>	<b>AL. 7.</b>	<b>Earth and Space Science Elective Core - Students will:</b>
<b>OBJECTIVE</b>	<b>7.1.</b>	Describe sources of energy, including solar, gravitational, geothermal, and nuclear. <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
<b>OBJECTIVE</b>	<b>7.2.</b>	Describe effects on weather of energy transfer within and among the atmosphere, hydrosphere, biosphere, and lithosphere. <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
<b>OBJECTIVE</b>	<b>7.2.a.</b>	Additional Minimum Content: Describing the energy transfer related to condensation in clouds, precipitation, winds, and ocean currents <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
<b>OBJECTIVE</b>	<b>7.4.b.</b>	Additional Minimum Content: Describing how the reception of solar radiation is affected by atmospheric and lithospheric conditions. Example: volcanic eruptions and greenhouse gases affecting reflection and absorption of solar radiation <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
<b>STANDARD</b>	<b>AL. 8.</b>	<b>Environmental Science Elective Core - Students will:</b>
<b>OBJECTIVE</b>	<b>8.1.</b>	Identify the influence of human population, technology, and cultural and industrial changes on the environment. <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The</li> </ul>

		<p>Greenhouse Effect and Global Warming</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	8.1.a.	<p>Additional Minimum Content: Describing the relationship between carrying capacity and population size</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
OBJECTIVE	8.2.	<p>Evaluate various fossil fuels for their effectiveness as energy resources.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> </ul>

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.2.a.	<p>Additional Minimum Content: Describing the formation and use of nonrenewable fossil fuels</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.2.b.	<p>Additional Minimum Content: Identifying by-products of the combustion of fossil fuels, including particulates, mercury, sulfur dioxide, nitrogen dioxide, and carbon dioxide</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.2.c.	<p>Additional Minimum Content: Identifying chemical equations associated with the combustion of fossil fuels</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.2.d.	<p>Additional Minimum Content: Describing benefits of abundant, affordable energy to mankind</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.2.e.	<p>Additional Minimum Content: Identifying effects of fossil fuel by-products on</p>

		<p>the environment, including ozone depletion; formation of acid rain, brown haze, and greenhouse gases; and concentration of particulates and heavy metals</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.3.e.	<p>Additional Minimum Content: Identifying ways the law of conservation of energy relates to fuel consumption. Examples: development of hybrid cars, construction of energy-efficient homes</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.4.	<p>Identify the impact of pollutants on the atmosphere.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	8.4.a.	<p>Additional Minimum Content: Identifying layers of the atmosphere and the composition of air</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	8.4.b.	<p>Additional Minimum Content: Describing the formation of primary, secondary, and indoor air pollutants</p>

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	8.4.c.	<p>Additional Minimum Content: Relating pollutants to smog and thermal inversions</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	8.5.	<p>Describe properties of water that make it a universal solvent.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
OBJECTIVE	8.6.a.	<p>Additional Minimum Content: Determining the quality of fresh water using chemical testing and bioassessment</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	8.6.b.	<p>Additional Minimum Content: Describing the use of chemicals and microorganisms in water treatment</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> </ul>

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	8.7.	<p>Identify reasons coastal waters serve as an important resource. Examples: economic stability, biodiversity, recreation</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> </ul>
OBJECTIVE	8.7.a.	<p>Additional Minimum Content: Classifying biota of estuaries, marshes, tidal pools, wetlands, beaches, and inlets</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> </ul>
OBJECTIVE	8.7.b.	<p>Additional Minimum Content: Comparing components of marine water to components of inland bodies of water</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	8.8.	<p>Identify major contaminants in water resulting from natural phenomena, homes, industry, and agriculture.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4:</li> </ul>

		<p>Observing the Effects of Acid Rain and Other Pollutants on Plants</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	8.8.a.	<p>Additional Minimum Content: Describing the eutrophication of water by industrial effluents and agricultural runoffs</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	8.8.b.	<p>Additional Minimum Content: Classifying sources of water pollution as point and nonpoint</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>

		<ul style="list-style-type: none"> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
OBJECTIVE	8.9.a.	<p>Additional Minimum Content: Defining various types and sources of waste and their impact on the soil. Examples: types - biodegradable, nonbiodegradable, organic, radioactive, nonradioactive; sources - pesticides, herbicides</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.9.b.	<p>Additional Minimum Content: Identifying ways to manage waste, including composting, recycling, reusing, and reclaiming</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.10.	<p>Describe the composition of soil profiles and soil samples of varying climates.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	8.10.a.	<p>Additional Minimum Content: Identifying various processes and activities that promote soil formation. Examples: weathering, decomposition, deposition</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
OBJECTIVE	8.10.b.	<p>Additional Minimum Content: Relating particle size to soil texture and type of sand, silt, or clay</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> </ul>

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	8.11.a.	<p>Additional Minimum Content: Describing methods for preventing soil erosion. Examples: planting vegetation, constructing terraces, providing barriers</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
OBJECTIVE	8.12.	<p>Identify positive and negative effects of human activities on biodiversity.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>

		<ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<b>STANDARD</b>	<b>AL. 9.</b>	<b>Forensic Science Elective Core - Students will:</b>
<b>OBJECTIVE</b>	<b>9.8.</b>	Describe general categories of drugs and poisons and their effects on humans. <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<b>OBJECTIVE</b>	<b>9.8.a.</b>	Additional Minimum Content: Explaining ways poisons are detected at autopsy <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<b>STANDARD</b>	<b>AL. 10.</b>	<b>Genetic Elective Core - Students will:</b>
<b>OBJECTIVE</b>	<b>10.2.</b>	Describe factors such as radiation, chemicals, and chance that cause mutations in populations. <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>
<b>OBJECTIVE</b>	<b>10.2.a.</b>	Additional Minimum Content: Describing effects of genetic variability on adaptations <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1:</li> </ul>

		Observing Radiation Effects on Plants
OBJECTIVE	10.7.a.	Additional Minimum Content: Applying the genetic code to predict amino acid sequence <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants</li> </ul>
STANDARD	AL.11.	Geology Elective Core - Students will:
OBJECTIVE	11.1.	Describe Earth's layers, including the lithosphere, asthenosphere, outer core, and inner core. <ul style="list-style-type: none"> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	11.1.a.	Additional Minimum Content: Identifying methods for determining the composition of Earth's lithosphere. Example: collection and analysis of rocks and minerals <ul style="list-style-type: none"> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	11.9.	Describe the movement and storage of water in terms of watersheds, rainfall, surface runoff, aquifers, and surface water reservoirs. <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
OBJECTIVE	11.13.a.	Additional Minimum Content: Explaining the formation of alluvial fans <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
OBJECTIVE	11.14.	Explain the interaction of the continuous processes of waves, tides, and winds with the coastal environment. <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> </ul>
OBJECTIVE	11.14.a.	Additional Minimum Content: Identifying the impact of periodic weather phenomena on coastal regions. Examples: hurricanes destroying sand dunes, El Nino or La Nina redefining shorelines <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> </ul>
OBJECTIVE	11.14.b.	Additional Minimum Content: Identifying the positive and negative impact of humans on coastal regions. Examples: positive - shoreline protection,

		<p>negative - buildings replacing protective dunes and barriers</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> </ul>
<b>STANDARD</b>	<b>AL. 13.</b>	<b>Marine Science Elective Core - Students will:</b>
<b>OBJECTIVE</b>	<b>13.2.</b>	<p>Differentiate among freshwater, brackish water, and saltwater.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<b>OBJECTIVE</b>	<b>13.4.</b>	<p>Recognize interactions between the atmosphere and the ocean.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>
<b>OBJECTIVE</b>	<b>13.6.</b>	<p>Describe components of major marine ecosystems, including estuaries, coral reefs, benthic communities, and open-ocean communities.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> </ul>
<b>OBJECTIVE</b>	<b>13.8.</b>	<p>Describe characteristics of marine plant and algae divisions.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
<b>OBJECTIVE</b>	<b>13.8.a.</b>	<p>Additional Minimum Content: Describing commercial, economical, and medicinal values of marine plants and algae</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Air, Water, and Soils</li> </ul>

OBJECTIVE	13.9.	<p>Arrange various forms of marine life from most simple to most complex.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> </ul>
OBJECTIVE	13.9.a.	<p>Additional Minimum Content: Classifying marine organisms using binomial nomenclature</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	13.9.b.	<p>Additional Minimum Content: Identifying characteristics of ocean-drifting organisms. Examples: phytoplankton, zooplankton</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	13.9.c.	<p>Additional Minimum Content: Identifying characteristics of marine invertebrates. Examples: Protozoa, Porifera, Coelenterata, Arthropoda</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	13.9.d.	<p>Additional Minimum Content: Identifying characteristics of marine vertebrates. Examples: fishes, reptiles, birds, mammals</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> </ul>
OBJECTIVE	13.9.e.	<p>Additional Minimum Content: Identifying characteristics of marine plants. Examples: algae, seaweed</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Air, Water, and Soils</li> </ul>
OBJECTIVE	13.10.	<p>Describe the anatomy and physiology of representative aquatic organisms.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> </ul>
OBJECTIVE	13.10.a.	<p>Additional Minimum Content: Identifying different aquatic species using dichotomous keys</p>

		<ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	13.11.	<p>Describe positive and negative effects of human influence on marine environments. Examples: positive - reef restoration, protection of endangered species; negative - pollution, overfishing</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Environmental Issues</li> </ul>
STANDARD	AL. 14.	<b>Zoology Elective Core - Students will:</b>
OBJECTIVE	14.4.	<p>Use taxonomic groupings to differentiate the structure and physiology of invertebrates with dichotomous keys.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	14.4.e.	<p>Additional Minimum Content: Identifying examples, characteristics, and life cycles of Arthropoda</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> </ul>
OBJECTIVE	14.5.	<p>Use taxonomic groupings to differentiate structure and physiology of vertebrates with dichotomous keys.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> </ul>
OBJECTIVE	14.5.d.	<p>Additional Minimum Content: Identifying examples and characteristics of Aves</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web</li> </ul>
OBJECTIVE	14.5.e.	<p>Additional Minimum Content: Identifying examples and characteristics of Mammalia</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet</li> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>

OBJECTIVE	14.6.	<p>Identify factors used to distinguish species, including behavioral differences and reproductive isolation.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
OBJECTIVE	14.7.	<p>Explain how species adapt to changing environments to enhance survival and reproductive success, including changes in structure, behavior, or physiology. Examples: aestivation, thicker fur, diurnal activity</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> </ul>
OBJECTIVE	14.8.a.	<p>Additional Minimum Content: Identifying causative factors of decreasing population size. Examples: overcrowding resulting in greater incidence of disease, fire destroying habitat and food sources</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes</li> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant</li> <li>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>