

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

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**New Mexico Standards**  
**Science**  
**Grade 7**

<b>STRAND / CONTENT STANDARD</b>	<b>NM.I.</b>	<b>Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</b>
<b>BENCHMARK / STANDARD</b>	<b>I-A.</b>	Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>I-A. 1a.</b>	<p>Use a variety of print and web resources to collect information, inform investigations, and answer a scientific question or hypothesis.</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</li> </ul>

		<p>Activity 1: Dissecting an Owl Pellet</p> <ul style="list-style-type: none"> <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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	I-A.2a.	<p>Use models to explain the relationships between variables being investigated.</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 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 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> </ul>
STRAND / CONTENT STANDARD	NM.I.	<p>Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</p>
BENCHMARK / STANDARD	I-B.	<p>Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge.</p>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	I-B.2a.	<p>Critique procedures used to investigate a hypothesis.</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</li> </ul>

		<p>2: Cleaning Up Shore Environments</p> <ul style="list-style-type: none"> <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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>I-B.3a.</p>	<p>Analyze and evaluate scientific explanations.</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>• 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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STRAND / CONTENT STANDARD	NM.I.	Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think
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BENCHMARK / STANDARD	I-C.	Use mathematical ideas, tools, and techniques to understand scientific knowledge.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	I-C.2a.	<p>Use mathematical expressions to represent data and observations collected in scientific investigations.</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> </ul>

		<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>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>I-C.3a.</p>	<p>Select and use an appropriate model to examine a phenomenon.</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> </ul>

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<b>STRAND / CONTENT STANDARD</b>	<b>NM.II.</b>	<b>Content of Science: Physical Science: Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.</b>
<b>BENCHMARK / STANDARD</b>	<b>II-A.</b>	<b>Know the forms and properties of matter and how matter interacts.</b>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-A.1a.</b>	<p>Explain how matter is transferred from one organism to another and between organisms and their environment (e.g., consumption, the water cycle, the carbon cycle, the nitrogen cycle).</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 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>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-A.4a.</b>	<p>Describe how substances react chemically in characteristic ways to form new substances (compounds) with different properties (e.g., carbon and oxygen combine to form carbon dioxide in respiration).</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>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-A.5a.</b>	<p>Know that chemical reactions are essential to life processes.</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 2: Water Analysis</li> <li>Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> </ul>
<b>STRAND / CONTENT STANDARD</b>	<b>NM.II.</b>	<b>Content of Science: Physical Science: Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.</b>

BENCHMARK / STANDARD	II-B.	Explain the physical processes involved in the transfer, change, and conservation of energy.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.1a.	<p>Know how various forms of energy are transformed through organisms and ecosystems, including: sunlight and photosynthesis; energy transformation in living systems (e.g., cellular processes changing chemical energy to heat and motion); and effect of mankind's use of energy and other activities on living systems (e.g., global warming, water quality).</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>
STRAND / CONTENT STANDARD	NM.II.	Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.
BENCHMARK / STANDARD	II-A.	Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.1a.	<p>Populations and Ecosystems: Identify the living and nonliving parts of an ecosystem and describe the relationships among these components.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.2a.	<p>Populations and Ecosystems: Explain biomes (i.e., aquatic, desert, rainforest, grasslands, tundra) and describe the New Mexico biome.</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 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 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.3a.	Populations and Ecosystems: Explain how individuals of species that exist together interact with their environment to create an ecosystem (e.g.,



PROFICIENCY		<p>populations, communities, niches, habitats, food webs).</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 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: Ecosystems, Energy, and Biodiversity</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.4a.	<p>Populations and Ecosystems: Explain the conditions and resources needed to sustain life in specific ecosystems.</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 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 11 Activity 2: Determining the Carrying Capacity of a Population</li> <li>• Teacher Resource CD: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
PERFORMANCE STANDARD / BENCHMARK /	II-A.5a.	<p>Populations and Ecosystems: Describe how the availability of resources and physical factors limit growth (e.g., quantity of light and water, range of temperature, composition of soil) and how the water, carbon, and nitrogen</p>

PROFICIENCY		<p>cycles contribute to the availability of those resources to support living systems.</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 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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.7a.	<p>Biodiversity: Know how to classify organisms: domain, kingdom, phylum, class, order, family, genus, and species.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
STRAND / CONTENT STANDARD	NM.II.	Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.
BENCHMARK / STANDARD	II-B.	Understand how traits are passed from one generation to the next and how species evolve.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.4a.	<p>Reproduction: Know that organisms that sexually reproduce fertile offspring are members of the same species.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.9a.	<p>Biological Evolution: Know that organisms can acquire unique characteristics through naturally occurring genetic variations.</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.10a.	<p>Biological Evolution: Identify adaptations that favor the survival of organisms in their environments (e.g., camouflage, shape of beak).</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.12a.	<p>Biological Evolution: Explain how species adapt to changes in the environment or become extinct and that extinction of species is common in the history of living things.</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> </ul>

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<b>STRAND / CONTENT STANDARD</b>	<b>NM.II.</b>	<b>Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</b>
<b>BENCHMARK / STANDARD</b>	<b>II-C.</b>	<b>Understand the structure of organisms and the function of cells in living systems.</b>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-C.1a.</b>	<p>Structure of Organisms: Understand that organisms are composed of cells and identify unicellular and multicellular organisms.</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>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-C.3a.</b>	<p>Function of Cells: Understand that many basic functions of organisms are carried out in cells, including: growth and division to produce more cells (mitosis); specialized functions of cells (e.g., reproduction, nerve-signal transmission, digestion, excretion, movement, transport of oxygen).</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>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-C.4a.</b>	<p>Function of Cells: Compare the structure and processes of plant cells and animal cells.</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>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-C.5a.</b>	<p>Function of Cells: Describe how some cells respond to stimuli (e.g., light, heat, pressure, gravity).</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>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-C.6a.</b>	<p>Function of Cells: Describe how factors (radiation, UV light, drugs) can damage cellular structure or function.</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 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>

		<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>Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
STRAND / CONTENT STANDARD	NM.II.	Content of Science: Earth and Space Science: Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.
BENCHMARK / STANDARD	II-A.	Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.2a.	<p>Explain how energy from the sun supports life on Earth.</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>
STRAND / CONTENT STANDARD	NM.II.	Content of Science: Earth and Space Science: Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.
BENCHMARK / STANDARD	II-B.	Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth's systems.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.3a.	<p>Know that changes to ecosystems sometimes decrease the capacity of the environment to support some life forms and are difficult and/or costly to remediate.</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>Teacher Resource CD: Environmental Issues</li> </ul>
STRAND / CONTENT STANDARD	NM.III.	Science and Society: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.
BENCHMARK / STANDARD	III-A.	Explain how scientific discoveries and inventions have changed individuals and societies.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.3a.	<p>Describe how scientific information can help individuals and communities respond to health emergencies (e.g., CPR, epidemics, HIV, bio-terrorism).</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</li> </ul>

		<p>1: Soil Analysis</p> <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>• 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> </ul>
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**New Mexico Standards  
Science  
Grade 8**

<b>STRAND / CONTENT STANDARD</b>	<b>NM.I.</b>	<b>Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</b>
<b>BENCHMARK / STANDARD</b>	<b>I-A.</b>	<b>Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.</b>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>I-A. 1a.</b>	<p>Evaluate the accuracy and reproducibility of data and observations.</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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>I-A.2a.</p>	<p>Use a variety of technologies to gather, analyze and interpret scientific data.</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> </ul>

		<ul style="list-style-type: none"> <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>
<b>STRAND / CONTENT STANDARD</b>	<b>NM.I.</b>	<b>Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</b>
<b>BENCHMARK / STANDARD</b>	<b>I-B.</b>	<b>Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge.</b>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>I-B.1a.</b>	<p>Examine alternative explanations for observations.</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</li> </ul>

		<p>2: Observing Air Pollution Indicators - Lichens</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 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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>I-B.2a.</p>	<p>Describe ways in which science differs from other ways of knowing and from other bodies of knowledge (e.g., experimentation, logical arguments, skepticism).</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> </ul>



		<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>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>I-B.3a.</p>	<p>Know that scientific knowledge is built on questions posed as testable hypotheses, which are tested until the results are accepted by peers.</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> </ul>

		<ul style="list-style-type: none"> <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>
STRAND / CONTENT STANDARD	NM.I.	Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.
BENCHMARK / STANDARD	I-C.	Use mathematical ideas, tools, and techniques to understand scientific knowledge.
PERFORMANCE	I-C.1a.	Use mathematical expressions and techniques to explain data and observations

<p>STANDARD / BENCHMARK / PROFICIENCY</p>		<p>and to communicate findings (e.g., formulas and equations, significant figures, graphing, sampling, estimation, mean).</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> <li>• Environmental Issues and Solutions: Unit 4 Lab 12</li> </ul>
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		<p>Activity 3: Evaluating the Health of an Ecosystem</p> <ul style="list-style-type: none"> <li>Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	I-C.2a.	<p>Create models to describe phenomena.</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 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 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> </ul>
STRAND / CONTENT STANDARD	NM.II.	Content of Science: Physical Science: Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.
BENCHMARK / STANDARD	II-A.	Know the forms and properties of matter and how matter interacts.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.1a.	<p>Properties of Matter: Know how to use density, boiling point, freezing point, conductivity, and color to identify various substances.</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 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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.3a.	<p>Properties of Matter: Understand the differences among elements, compounds, and mixtures by: classification of materials as elements, compounds, or mixtures; interpretation of chemical formulas; separation of mixtures into compounds by methods including evaporation, filtration, screening, and magnetism.</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.8a.	<p>Changes in Matter: Describe various familiar physical and chemical changes that occur naturally (e.g., snow melting, photosynthesis, rusting, burning).</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity</li> </ul>

		<p>1: Modeling Salt Runoff Discharge</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.9a.	<p>Changes in Matter: Identify factors that influence the rate at which chemical reactions occur (e.g., temperature, concentration).</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.10a.	<p>Changes in Matter: Know that chemical reactions can absorb energy (endothermic reactions) or release energy (exothermic reactions).</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
STRAND / CONTENT STANDARD	NM.II.	Content of Science: Physical Science: Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.
BENCHMARK / STANDARD	II-B.	Explain the physical processes involved in the transfer, change, and conservation of energy.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.1a.	<p>Energy Transformation: Know that energy exists in many forms and that when energy is transformed some energy is usually converted to heat.</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.3a.	<p>Energy Transformation: Distinguish between renewable and nonrenewable sources of energy.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Environmental Issues</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.5a.	<p>Waves: Understand how light and radio waves carry energy through vacuum or matter by: straight-line travel unless an object is encountered; reflection by a mirror, refraction by a lens, absorption by a dark object; separation of white light into different wavelengths by prisms; and visibility of objects due to light emission or scattering.</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>
STRAND / CONTENT STANDARD	NM.II.	Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.
BENCHMARK / STANDARD	II-A.	Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.1a.	<p>Describe how matter moves through ecosystems (e.g., water cycle, carbon cycle).</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</li> </ul>

		<p>1: The Greenhouse Effect and Global Warming</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 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: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>II-A.2a.</p>	<p>Describe how energy flows through ecosystems (e.g., sunlight, green plants, food for animals).</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 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> </ul>

		<ul style="list-style-type: none"> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.3a.	<p>Explain how a change in the flow of energy can impact an ecosystem (e.g., the amount of sunlight available for plant growth, global climate change).</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>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>
STRAND / CONTENT STANDARD	NM.II.	Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.
BENCHMARK / STANDARD	II-B.	Understand how traits are passed from one generation to the next and how species evolve.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.2a.	<p>Identify DNA as the chemical compound involved in heredity in living organisms.</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>
STRAND / CONTENT STANDARD	NM.II.	Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.
BENCHMARK / STANDARD	II-C.	Understand the structure of organisms and the function of cells in living systems.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-C.1a.	<p>Describe how cells use chemical energy obtained from food to conduct cellular functions (i.e., 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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-C.2a.	<p>Explain that photosynthesis in green plants captures the energy from the sun and stores it chemically.</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</li> </ul>

		Biodiversity
STRAND / CONTENT STANDARD	NM.II.	Content of Science: Earth and Space Science: Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.
BENCHMARK / STANDARD	II-B.	Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth's systems.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.1a.	Describe the role of pressure (and heat) in the rock cycle. <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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.2a.	Understand the unique role water plays on Earth, including: ability to remain liquid at most Earth temperatures; properties of water related to processes in the water cycle (evaporation, condensation, precipitation, surface run-off, percolation); dissolving of minerals and gases and transport to the oceans; fresh and salt water in oceans, rivers, lakes, and glaciers; reactant in photosynthesis. <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 7 Activity 2: Soil Porosity and Permeability</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 9 Activity 1: Food Web Organization</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: Ecosystems, Energy, and Biodiversity</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.3a.	Understand the geologic conditions that have resulted in energy resources (e.g., oil, coal, natural gas) available in New Mexico. <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>
STRAND / CONTENT STANDARD	NM.III.	Science and Society: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.



BENCHMARK / STANDARD	III-A.	Explain how scientific discoveries and inventions have changed individuals and societies.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.1a.	<p>Analyze the interrelationship between science and technology (e.g., germ theory, vaccines).</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> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.2a.	<p>Describe how scientific information can help to explain environmental phenomena (e.g., floods, earthquakes, volcanoes, fire, extreme weather).</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</li> </ul>

		<p>Activity 3: 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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.3a.	<p>Describe how technological revolutions have significantly influenced societies (e.g., energy production, warfare, space exploration).</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.4a.	<p>Critically analyze risks and benefits associated with technologies related to energy production.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Environmental Issues</li> </ul>

### New Mexico Standards

#### Science

#### Grade 9

STRAND / CONTENT STANDARD	NM.I.	Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.
BENCHMARK / STANDARD	I-A.	Use accepted scientific methods to collect, analyze, and interpret data and observations and to design and conduct scientific investigations and communicate results.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	I-A.1a.	<p>Describe the essential components of an investigation, including appropriate methodologies, proper equipment, and safety precautions.</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> </ul>

		<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>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>I-A.2a.</p>	<p>Design and conduct scientific investigations that include: testable hypotheses; controls and variables; methods to collect, analyze, and interpret data; results that address hypotheses being investigated; predictions based on results; re-evaluation of hypotheses and additional experimentation as necessary; error analysis.</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</li> </ul>

		<p>1: Biodegrading a Simulated Oil Spill</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 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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>1-A.3a.</p>	<p>Use appropriate technologies to collect, analyze, and communicate scientific data (e.g., computers, calculators, balances, microscopes).</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity</li> </ul>

1: Biodegradation in a Landfill

- Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants
- Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill
- Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments
- Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes
- Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming
- Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge
- Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants
- Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens
- Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis
- Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability
- Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates
- Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured
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- Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids
- Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant
- Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution
- Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem
- Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen

<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>I-A. 4a.</p>	<p>Convey results of investigations using scientific concepts, methodologies, and expressions, including: scientific language and symbols; diagrams, charts, and other data displays; mathematical expressions and processes (e.g., mean, median, slope, proportionality); clear, logical, and concise communication; reasoned arguments.</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</li> </ul>
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		<p>Activity 2: Biological Treatment of Pollution</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> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>1-A.5a.</p>	<p>Understand how scientific theories are used to explain and predict natural phenomena (e.g., plate tectonics, ocean currents, structure of atom).</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</li> </ul>

		<p>2: A Closer Look at Energy Pyramids</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>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<b>STRAND / CONTENT STANDARD</b>	<b>NM.I.</b>	<b>Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</b>
<b>BENCHMARK / STANDARD</b>	<b>I-B.</b>	<b>Understand that scientific processes produce scientific knowledge that is continually evaluated, validated, revised, or rejected.</b>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>I-B.2a.</b>	<p>Use scientific reasoning and valid logic to recognize: faulty logic; cause and effect; the difference between observation and unsubstantiated inferences and conclusions; potential bias.</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> </ul>



		<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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>I-B.6a.</p>	<p>Examine the scientific processes and logic used in investigations of past events (e.g., using data from crime scenes, fossils), investigations that can be planned in advance but are only done once (e.g., expensive or time-consuming experiments such as medical clinical trials), and investigations of phenomena that can be repeated easily and frequently.</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</li> </ul>

		<p>Pollutants on Plants</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 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>
<b>STRAND / CONTENT STANDARD</b>	NM.I.	<b>Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</b>
<b>BENCHMARK / STANDARD</b>	I-C.	Use mathematical concepts, principles, and expressions to analyze data, develop models, understand patterns and relationships, evaluate findings, and draw conclusions.
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	I-C.1a.	<p>Create multiple displays of data to analyze and explain the relationships in scientific investigations.</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</li> </ul>

		<p>2: Soil 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 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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>1-C.2a.</p>	<p>Use mathematical models to describe, explain, and predict natural phenomena.</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 2: Cleaning Up Shore Environments</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 2: Observing Air Pollution Indicators - Lichens</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 8 Activity 1: How Water Pollutants Are Measured</li> <li>• Environmental Issues and Solutions: Unit 2 Lab 8 Activity</li> </ul>

		<p>3: Determining the LD50 of a Water Pollutant</p> <ul style="list-style-type: none"> <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>• 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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>I-C.5a.</p>	<p>Use mathematics to express and establish scientific relationships (e.g., scientific notation, vectors, dimensional analysis).</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 2: Cleaning Up Shore Environments</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 2: Observing Air Pollution Indicators - Lichens</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 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 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 2: Biological Treatment of Pollution</li> <li>• Environmental Issues and Solutions: Unit 4 Lab 12</li> </ul>

		<p>Activity 3: Evaluating the Health of an Ecosystem</p> <ul style="list-style-type: none"> <li>Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<b>STRAND / CONTENT STANDARD</b>	<b>NM.II.</b>	<b>The Content of Science: Physical Science: Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.</b>
<b>BENCHMARK / STANDARD</b>	<b>II-A.</b>	<b>Understand the properties, underlying structure, and reactions of matter.</b>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-A.2a.</b>	<p>Properties of Matter: Identify, measure, and use a variety of physical and chemical properties (e.g., electrical conductivity, density, viscosity, chemical reactivity, pH, melting point).</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>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-A.3a.</b>	<p>Properties of Matter: Know how to use properties to separate mixtures into pure substances (e.g., distillation, chromatography, solubility).</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>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-A.12a.</b>	<p>Chemical Reactions: Know that chemical reactions involve the rearrangement of atoms, and that they occur on many timescales (e.g., picoseconds to millennia).</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>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-A.13a.</b>	<p>Chemical Reactions: Understand types of chemical reactions (e.g., synthesis, decomposition, combustion, redox, neutralization) and identify them as exothermic or endothermic.</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>STRAND / CONTENT STANDARD</b>	<b>NM.II.</b>	<b>The Content of Science: Physical Science: Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.</b>
<b>BENCHMARK / STANDARD</b>	<b>II-B.</b>	<b>Understand the transformation and transmission of energy and how energy and matter interact.</b>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-B.1a.</b>	<p>Energy Transformation and Transfer: Identify different forms of energy, including kinetic, gravitational (potential), chemical, thermal, nuclear, and electromagnetic.</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>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-B.2a.</b>	<p>Energy Transformation and Transfer: Explain how thermal energy (heat) consists of the random motion and vibrations of atoms and molecules and is measured by 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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.4a.	<p>Energy Transformation and Transfer: Understand how heat can be transferred by conduction, convection, and radiation, and how heat conduction differs in conductors and insulators.</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.5a.	<p>Energy Transformation and Transfer: Explain how heat flows in terms of the transfer of vibrational motion of atoms and molecules from hotter to colder regions.</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>
STRAND / CONTENT STANDARD	NM.II.	The Content of Science: Physical Science: Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.
BENCHMARK / STANDARD	II-C.	Understand the motion of objects and waves, and the forces that cause them.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-C.12a.	<p>Motion: Describe how waves are used for practical purposes (e.g., seismic data, acoustic effects, Doppler effect).</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>
STRAND / CONTENT STANDARD	NM.II.	The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.
BENCHMARK / STANDARD	II-A.	Understand how the survival of species depends on biodiversity and on complex interactions, including the cycling of matter and the flow of energy.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.1a.	<p>Ecosystems: Know that an ecosystem is complex and may exhibit fluctuations around a steady state or may evolve over time.</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 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: Air, Water, and Soils</li> <li>Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.2a.	<p>Ecosystems: Describe how organisms cooperate and compete in ecosystems (e.g., producers, decomposers, herbivores, carnivores, omnivores, predator-prey, symbiosis, mutualism).</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 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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.3a.	<p>Ecosystems: Understand and describe how available resources limit the amount of life an ecosystem can support (e.g., energy, water, oxygen, nutrients).</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 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 11 Activity 2: Determining the Carrying Capacity of a Population</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.4a.	<p>Ecosystems: Critically analyze how humans modify and change ecosystems (e.g., harvesting, pollution, population growth, technology).</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</li> </ul>

		<p>3: Examining Oil-Degrading Microbes</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 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: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>II-A.5a.</p>	<p>Energy Flow in the Environment: Explain how matter and energy flow through biological systems (e.g., organisms, communities, ecosystems), and how the total amount of matter and energy is conserved but some energy is always</p>



		<p>released as heat to 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 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 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: Ecosystems, Energy, and Biodiversity</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.6a.	<p>Energy Flow in the Environment: Describe how energy flows from the sun through plants to herbivores to carnivores and decomposers.</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.7a.	<p>Energy Flow in the Environment: Understand and explain the principles of photosynthesis (i.e., chloroplasts in plants convert light energy, carbon dioxide, and water into chemical energy).</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.8a.	<p>Biodiversity: Understand and explain the hierarchical classification scheme (i.e., domain, kingdom, phylum, class, order, family, genus, species), including: classification of an organism into a category; similarity inferred from molecular structure (DNA) closely matching classification based on anatomical similarities; similarities of organisms reflecting evolutionary relationships.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.9a.	<p>Biodiversity: Understand variation within and among species, including: mutations and genetic drift; factors affecting the survival of an organism; natural selection.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 2 Activity</li> </ul>

		<p>1: Observing Radiation Effects on Plants</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>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
<b>STRAND / CONTENT STANDARD</b>	<b>NM.II.</b>	<b>The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</b>
<b>BENCHMARK / STANDARD</b>	<b>II-B.</b>	<b>Understand the genetic basis for inheritance and the basic concepts of biological evolution.</b>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-B.1a.</b>	<p>Genetics: Know how DNA carries all genetic information in the units of heredity called genes, including: the structure of DNA (e.g., subunits A, G, C, T); information-preserving replication of DNA; alteration of genes by inserting, deleting, or substituting parts of 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>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-B.2a.</b>	<p>Genetics: Use appropriate vocabulary to describe inheritable traits (i.e., genotype, phenotype).</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</li> </ul>

		<p>2: Soil 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 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: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>II-B.5a.</p>	<p>Genetics: Know how genetic variability results from the recombination and mutation of genes, including: sorting and recombination of genes in sexual reproduction result in a change in DNA that is passed on to offspring; radiation or chemical substances can cause mutations in cells, resulting in a permanent change in 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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>II-B.9a.</p>	<p>Biological Evolution: Critically analyze the data and observations supporting the conclusion that the species living on Earth today are related by descent from the ancestral one-celled organisms.</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</li> </ul>

		<p>1: Observing Radiation Effects on Plants</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 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>
PERFORMANCE STANDARD /	II-B.11a.	Biological Evolution: Understand that evolution is a consequence of many factors, including the ability of organisms to reproduce, genetic variability,

BENCHMARK / PROFICIENCY		<p>the effect of limited resources, and natural selection.</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>
STRAND / CONTENT STANDARD	NM.II.	The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.
BENCHMARK / STANDARD	II-C.	Understand the characteristics, structures, and functions of cells.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-C.1a.	<p>Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-C.2a.	<p>Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); storage of genetic material in DNA; similarities and differences between plant and animal cells; prokaryotic and eukaryotic cells.</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 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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-C.3a.	<p>Structure and Function: Describe the mechanisms for cellular processes (e.g., energy production and storage, transport of molecules, waste disposal, synthesis of new molecules).</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>
STRAND / CONTENT STANDARD	NM.II.	The Content of Science: Earth and Space Science: Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.
BENCHMARK / STANDARD	II-B.	Examine the scientific theories of the origin, structure, energy, and evolution of Earth and its atmosphere, and their interconnections.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.6a.	<p>Energy in Earth's System: Know that Earth's systems are driven by internal (i.e., radioactive decay and gravitational energy) and external (i.e., the sun) sources of energy.</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>
PERFORMANCE STANDARD /	II-B.7a.	<p>Energy in Earth's System: Describe convection as the mechanism for moving heat energy from deep within Earth to the surface and discuss how this process results in plate tectonics, including: geological manifestations (e.g.,</p>

BENCHMARK / PROFICIENCY		<p>earthquakes, volcanoes, mountain building) that occur at plate boundaries; impact of plate motions on societies and the environment (e.g., earthquakes, volcanoes).</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.8a.	<p>Energy in Earth's System: Describe the patterns and relationships in the circulation of air and water driven by the sun's radiant energy, including: patterns in weather systems related to the transfer of energy; differences between climate and weather; global climate, global warming, and the greenhouse effect; El Nino, La Nina, and other climatic trends.</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.9a.	<p>Geochemical Cycles: Know that Earth's system contains a fixed amount of natural resources that cycle among land, water, the atmosphere, and living things (e.g., carbon and nitrogen cycles, rock cycle, water cycle, ground water, aquifers).</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 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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.10a.	<p>Geochemical Cycles: Describe the composition and structure of Earth's materials, including: the major rock types (i.e., sedimentary, igneous, metamorphic) and their formation; natural resources (e.g., minerals, petroleum) and their formation.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.11a.	<p>Geochemical Cycles: Explain how layers of the atmosphere (e.g., ozone, ionosphere) change naturally and artificially.</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 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>
STRAND / CONTENT STANDARD	NM.III.	<p>Science and Society: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.</p>

BENCHMARK / STANDARD	III-A.	Examine and analyze how scientific discoveries and their applications affect the world, and explain how societies influence scientific investigations and applications.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.1a.	<p>Science and Technology: Know how science enables technology but also constrains it, and recognize the difference between real technology and science fiction (e.g., rockets vs. antigravity machines; nuclear reactors vs. perpetual-motion machines; medical X-rays vs. Star-Trek tricorders).</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> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.2a.	<p>Science and Technology: Understand how advances in technology enable further advances in science (e.g., microscopes and cellular structure; telescopes and understanding of the universe).</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> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.3a.	<p>Science and Technology: Evaluate the influences of technology on society (e.g., communications, petroleum, transportation, nuclear energy, computers, medicine, genetic engineering) including both desired and undesired effects, and including some historical examples (e.g., the wheel, the plow, the printing press, the lightning rod).</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>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>III-A.4a.</p>	<p>Science and Technology: Understand the scientific foundations of common technologies (e.g., kitchen appliances, radio, television, aircraft, rockets, computers, medical X-rays, selective breeding, fertilizers and pesticides, agricultural equipment).</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> </ul>
<p>PERFORMANCE</p>	<p>III-</p>	<p>Science and Technology: Describe how human activities have affected ozone in</p>



STANDARD / BENCHMARK / PROFICIENCY	A. 7a.	<p>the upper atmosphere and how it affects health and the environment.</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 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 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 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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A. 9a.	<p>Science and Society: Describe how scientific knowledge helps decision makers with local, national, and global challenges (e.g., Waste Isolation Pilot Project [WIPP], mining, drought, population growth, alternative energy, climate change).</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</li> </ul>

		<p>1: Identifying Airborne Pollutants</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 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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>III-A.12a.</p>	<p>Science and Society: Explain how societies can change ecosystems and how these changes can be reversible or irreversible.</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> </ul>

		<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 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: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>III-A.13a.</p>	<p>Science and Society: Describe how environmental, economic, and political interests impact resource management and use in New Mexico.</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>

		<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> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>III-A.15a.</p>	<p>Science and Individuals: Identify how science has produced knowledge that is relevant to individual health and material prosperity.</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 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> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>III-A.18a.</p>	<p>Science and Individuals: Understand that scientists have characteristics in common with other individuals (e.g., employment and career needs, curiosity, desire to perform public service, greed, preconceptions and biases, temptation to be unethical, core values including honesty and openness).</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</li> </ul>

		<p>3: Soil Testing For Nitrogen, pH, and Phosphates</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 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>
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New Mexico Standards  
Science  
Grade 10

<b>STRAND / CONTENT STANDARD</b>	<b>NM.I.</b>	<b>Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</b>
<b>BENCHMARK / STANDARD</b>	<b>I-A.</b>	<b>Use accepted scientific methods to collect, analyze, and interpret data and observations and to design and conduct scientific investigations and communicate results.</b>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>I-A.1a.</b>	<p>Describe the essential components of an investigation, including appropriate methodologies, proper equipment, and safety precautions.</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> </ul>

		<ul style="list-style-type: none"> <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>
<p><b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b></p>	<p><b>I-A. 2a.</b></p>	<p>Design and conduct scientific investigations that include: testable hypotheses; controls and variables; methods to collect, analyze, and interpret data; results that address hypotheses being investigated; predictions based on results; re-evaluation of hypotheses and additional experimentation as necessary; error analysis.</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity</li> </ul>

1: Biodegradation in a Landfill

- Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants
- Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill
- Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments
- Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes
- Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming
- Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge
- Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants
- Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens
- Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis
- Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability
- Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates
- Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured
- Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis
- Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant
- Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants
- Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet
- Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey
- Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web
- Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems
- Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population
- Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization
- Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids
- Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant
- Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution
- Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem
- Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen

<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>I-A.3a.</p>	<p>Use appropriate technologies to collect, analyze, and communicate scientific data (e.g., computers, calculators, balances, microscopes).</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> <li>• Environmental Issues and Solutions: Unit 4 Lab 12</li> </ul>
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		<p>Activity 3: Evaluating the Health of an Ecosystem</p> <ul style="list-style-type: none"> <li>Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>I-A. 4a.</p>	<p>Convey results of investigations using scientific concepts, methodologies, and expressions, including: scientific language and symbols; diagrams, charts, and other data displays; mathematical expressions and processes (e.g., mean, median, slope, proportionality); clear, logical, and concise communication; reasoned arguments.</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> </ul>

		<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>• 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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>1-A.5a.</p>	<p>Understand how scientific theories are used to explain and predict natural phenomena (e.g., plate tectonics, ocean currents, structure of atom).</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</li> </ul>

		<p>Activity 2: Determining the Carrying Capacity of a Population</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> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<b>STRAND / CONTENT STANDARD</b>	<b>NM.I.</b>	<b>Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</b>
<b>BENCHMARK / STANDARD</b>	<b>I-B.</b>	<b>Understand that scientific processes produce scientific knowledge that is continually evaluated, validated, revised, or rejected.</b>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>I-B. 2a.</b>	<p>Use scientific reasoning and valid logic to recognize: faulty logic; cause and effect; the difference between observation and unsubstantiated inferences and conclusions; potential bias.</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</li> </ul>

		<p>Activity 1: Dissecting an Owl Pellet</p> <ul style="list-style-type: none"> <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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>-B.6a.</p>	<p>Examine the scientific processes and logic used in investigations of past events (e.g., using data from crime scenes, fossils), investigations that can be planned in advance but are only done once (e.g., expensive or time-consuming experiments such as medical clinical trials), and investigations of phenomena that can be repeated easily and frequently.</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</li> </ul>

		<p>2: Water Analysis</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 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>
<b>STRAND / CONTENT STANDARD</b>	<b>NM.I.</b>	<b>Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</b>
<b>BENCHMARK / STANDARD</b>	<b>I-C.</b>	<b>Use mathematical concepts, principles, and expressions to analyze data, develop models, understand patterns and relationships, evaluate findings, and draw conclusions.</b>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>I-C.1a.</b>	<p>Create multiple displays of data to analyze and explain the relationships in scientific investigations.</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> </ul>

		<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 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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>I-C.2a.</p>	<p>Use mathematical models to describe, explain, and predict natural phenomena.</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 2: Cleaning Up Shore Environments</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 2: Observing Air Pollution Indicators - Lichens</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 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 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>• 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>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>1-C.3a.</p>	<p>Use technologies to quantify relationships in scientific hypotheses (e.g., calculators, computer spreadsheets and databases, graphing software, simulations, modeling).</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 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 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> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>1-C.5a.</p>	<p>Use mathematics to express and establish scientific relationships (e.g., scientific notation, vectors, dimensional analysis).</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 2: Cleaning Up Shore Environments</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> </ul>

		<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 7 Activity 2: Soil Porosity and Permeability</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 3: Determining the LD50 of a Water Pollutant</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 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>
<b>STRAND / CONTENT STANDARD</b>	<b>NM.II.</b>	<b>The Content of Science: Physical Science: Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.</b>
<b>BENCHMARK / STANDARD</b>	<b>II-A.</b>	<b>Understand the properties, underlying structure, and reactions of matter.</b>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-A.2a.</b>	<p>Properties of Matter: Identify, measure, and use a variety of physical and chemical properties (e.g., electrical conductivity, density, viscosity, chemical reactivity, pH, melting point).</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>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-A.3a.</b>	<p>Properties of Matter: Know how to use properties to separate mixtures into pure substances (e.g., distillation, chromatography, solubility).</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>
<b>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</b>	<b>II-A.12a.</b>	<p>Chemical Reactions: Know that chemical reactions involve the rearrangement of atoms, and that they occur on many timescales (e.g., picoseconds to millennia).</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 5 Activity</li> </ul>



		1: Modeling Salt Runoff Discharge
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.13a.	Chemical Reactions: Understand types of chemical reactions (e.g., synthesis, decomposition, combustion, redox, neutralization) and identify them as exothermic or endothermic. <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge</li> </ul>
STRAND / CONTENT STANDARD	NM.II.	The Content of Science: Physical Science: Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.
BENCHMARK / STANDARD	II-B.	Understand the transformation and transmission of energy and how energy and matter interact.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.1a.	Energy Transformation and Transfer: Identify different forms of energy, including kinetic, gravitational (potential), chemical, thermal, nuclear, and electromagnetic. <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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.2a.	Energy Transformation and Transfer: Explain how thermal energy (heat) consists of the random motion and vibrations of atoms and molecules and is measured by temperature. <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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.4a.	Energy Transformation and Transfer: Understand how heat can be transferred by conduction, convection, and radiation, and how heat conduction differs in conductors and insulators. <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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.5a.	Energy Transformation and Transfer: Explain how heat flows in terms of the transfer of vibrational motion of atoms and molecules from hotter to colder regions. <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>
STRAND / CONTENT STANDARD	NM.II.	The Content of Science: Physical Science: Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.
BENCHMARK / STANDARD	II-C.	Understand the motion of objects and waves, and the forces that cause them.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-C.12a.	Motion: Describe how waves are used for practical purposes (e.g., seismic data, acoustic effects, Doppler effect). <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>
STRAND / CONTENT STANDARD	NM.II.	The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

BENCHMARK / STANDARD	II-A.	Understand how the survival of species depends on biodiversity and on complex interactions, including the cycling of matter and the flow of energy.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.1a.	<p>Ecosystems: Know that an ecosystem is complex and may exhibit fluctuations around a steady state or may evolve over time.</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 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: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.2a.	<p>Ecosystems: Describe how organisms cooperate and compete in ecosystems (e.g., producers, decomposers, herbivores, carnivores, omnivores, predator-prey, symbiosis, mutualism).</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 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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.3a.	<p>Ecosystems: Understand and describe how available resources limit the amount of life an ecosystem can support (e.g., energy, water, oxygen, nutrients).</p> <ul style="list-style-type: none"> <li>• Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill</li> </ul>

		<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 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>• Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>II-A.4a.</p>	<p>Ecosystems: Critically analyze how humans modify and change ecosystems (e.g., harvesting, pollution, population growth, technology).</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</li> </ul>

		<p>Ecosystems</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 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: Air, Water, and Soils</li> <li>• Teacher Resource CD: Ecosystems, Energy, and Biodiversity</li> <li>• Teacher Resource CD: Environmental Issues</li> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>II-A.5a.</p>	<p>Energy Flow in the Environment: Explain how matter and energy flow through biological systems (e.g., organisms, communities, ecosystems), and how the total amount of matter and energy is conserved but some energy is always released as heat to 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 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 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: Ecosystems, Energy, and Biodiversity</li> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>II-A.6a.</p>	<p>Energy Flow in the Environment: Describe how energy flows from the sun through plants to herbivores to carnivores and decomposers.</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>

PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.7a.	<p>Energy Flow in the Environment: Understand and explain the principles of photosynthesis (i.e., chloroplasts in plants convert light energy, carbon dioxide, and water into chemical energy).</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.8a.	<p>Biodiversity: Understand and explain the hierarchical classification scheme (i.e., domain, kingdom, phylum, class, order, family, genus, species), including: classification of an organism into a category; similarity inferred from molecular structure (DNA) closely matching classification based on anatomical similarities; similarities of organisms reflecting evolutionary relationships.</p> <ul style="list-style-type: none"> <li>Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-A.9a.	<p>Biodiversity: Understand variation within and among species, including: mutations and genetic drift; factors affecting the survival of an organism; natural selection.</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 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: Ecosystems, Energy, and Biodiversity</li> </ul>
STRAND / CONTENT STANDARD	NM.II.	The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.
BENCHMARK / STANDARD	II-B.	Understand the genetic basis for inheritance and the basic concepts of biological evolution.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.1a.	<p>Genetics: Know how DNA carries all genetic information in the units of heredity called genes, including: the structure of DNA (e.g., subunits A, G, C, T); information-preserving replication of DNA; alteration of genes by inserting, deleting, or substituting parts of 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>

<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>II-B.2a.</p>	<p>Genetics: Use appropriate vocabulary to describe inheritable traits (i.e., genotype, phenotype).</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> <li>• Environmental Issues and Solutions: Unit 4 Lab 12</li> </ul>
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		<p>Activity 3: Evaluating the Health of an Ecosystem</p> <ul style="list-style-type: none"> <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> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.5a.	<p>Genetics: Know how genetic variability results from the recombination and mutation of genes, including: sorting and recombination of genes in sexual reproduction result in a change in DNA that is passed on to offspring; radiation or chemical substances can cause mutations in cells, resulting in a permanent change in 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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.9a.	<p>Biological Evolution: Critically analyze the data and observations supporting the conclusion that the species living on Earth today are related by descent from the ancestral one-celled organisms.</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</li> </ul>

		<p>Activity 2: 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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.11a.	<p>Biological Evolution: Understand that evolution is a consequence of many factors, including the ability of organisms to reproduce, genetic variability, the effect of limited resources, and natural selection.</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>
STRAND / CONTENT STANDARD	NM.II.	The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.
BENCHMARK / STANDARD	II-C.	Understand the characteristics, structures, and functions of cells.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-C.1a.	<p>Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-C.2a.	<p>Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); storage of genetic material in DNA; similarities and differences between plant and animal cells; prokaryotic and eukaryotic cells.</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 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>



PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-C.3a.	Structure and Function: Describe the mechanisms for cellular processes (e.g., energy production and storage, transport of molecules, waste disposal, synthesis of new molecules).  <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>
STRAND / CONTENT STANDARD	NM.II.	The Content of Science: Earth and Space Science: Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.
BENCHMARK / STANDARD	II-B.	Examine the scientific theories of the origin, structure, energy, and evolution of Earth and its atmosphere, and their interconnections.
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.6a.	Energy in Earth's System: Know that Earth's systems are driven by internal (i.e., radioactive decay and gravitational energy) and external (i.e., the sun) sources of energy.  <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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.7a.	Energy in Earth's System: Describe convection as the mechanism for moving heat energy from deep within Earth to the surface and discuss how this process results in plate tectonics, including: geological manifestations (e.g., earthquakes, volcanoes, mountain building) that occur at plate boundaries; impact of plate motions on societies and the environment (e.g., earthquakes, volcanoes).  <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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.8a.	Energy in Earth's System: Describe the patterns and relationships in the circulation of air and water driven by the sun's radiant energy, including: patterns in weather systems related to the transfer of energy; differences between climate and weather; global climate, global warming, and the greenhouse effect; El Nino, La Nina, and other climatic trends.  <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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.9a.	Geochemical Cycles: Know that Earth's system contains a fixed amount of natural resources that cycle among land, water, the atmosphere, and living things (e.g., carbon and nitrogen cycles, rock cycle, water cycle, ground water, aquifers).  <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 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>
PERFORMANCE STANDARD /	II-B.10a.	Geochemical Cycles: Describe the composition and structure of Earth's materials, including: the major rock types (i.e., sedimentary, igneous, metamorphic) and their formation; natural resources (e.g., minerals,

BENCHMARK / PROFICIENCY		<p>petroleum) and their formation.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Environmental Issues</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	II-B.11a.	<p>Geochemical Cycles: Explain how layers of the atmosphere (e.g., ozone, ionosphere) change naturally and artificially.</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 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>
STRAND / CONTENT STANDARD	NM.III.	<p>Science and Society: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.</p>
BENCHMARK / STANDARD	III-A.	<p>Examine and analyze how scientific discoveries and their applications affect the world, and explain how societies influence scientific investigations and applications.</p>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.1a.	<p>Science and Technology: Know how science enables technology but also constrains it, and recognize the difference between real technology and science fiction (e.g., rockets vs. antigravity machines; nuclear reactors vs. perpetual-motion machines; medical X-rays vs. Star-Trek tricorders).</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> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.2a.	<p>Science and Technology: Understand how advances in technology enable further advances in science (e.g., microscopes and cellular structure; telescopes and understanding of the universe).</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> </ul>

<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>III-A.3a.</p>	<p>Science and Technology: Evaluate the influences of technology on society (e.g., communications, petroleum, transportation, nuclear energy, computers, medicine, genetic engineering) including both desired and undesired effects, and including some historical examples (e.g., the wheel, the plow, the printing press, the lightning rod).</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</li> </ul>
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		<p>Activity 2: Biological Treatment of Pollution</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> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.4a.	<p>Science and Technology: Understand the scientific foundations of common technologies (e.g., kitchen appliances, radio, television, aircraft, rockets, computers, medical X-rays, selective breeding, fertilizers and pesticides, agricultural equipment).</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> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.7a.	<p>Science and Technology: Describe how human activities have affected ozone in the upper atmosphere and how it affects health and the environment.</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 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 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 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>

		<ul style="list-style-type: none"> <li>Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>III-A.9a.</p>	<p>Science and Society: Describe how scientific knowledge helps decision makers with local, national, and global challenges (e.g., Waste Isolation Pilot Project [WIPP], mining, drought, population growth, alternative energy, climate change).</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> </ul>

		<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> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
<p>PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY</p>	<p>III-A.12a.</p>	<p>Science and Society: Explain how societies can change ecosystems and how these changes can be reversible or irreversible.</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</li> </ul>

		<p>Population</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> <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> <li>• Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen</li> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.13a.	<p>Science and Society: Describe how environmental, economic, and political interests impact resource management and use in New Mexico.</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>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.15a.	<p>Science and Individuals: Identify how science has produced knowledge that is relevant to individual health and material prosperity.</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 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> </ul>
PERFORMANCE STANDARD / BENCHMARK / PROFICIENCY	III-A.18a.	<p>Science and Individuals: Understand that scientists have characteristics in common with other individuals (e.g., employment and career needs, curiosity, desire to perform public service, greed, preconceptions and biases, temptation</p>

to be unethical, core values including honesty and openness).

- Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill
- Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants
- Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegrading a Simulated Oil Spill
- Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments
- Environmental Issues and Solutions: Unit 1 Lab 3 Activity 3: Examining Oil-Degrading Microbes
- Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming
- Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge
- Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Identifying Airborne Pollutants
- Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens
- Environmental Issues and Solutions: Unit 2 Lab 7 Activity 1: Soil Analysis
- Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability
- Environmental Issues and Solutions: Unit 2 Lab 7 Activity 3: Soil Testing For Nitrogen, pH, and Phosphates
- Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured
- Environmental Issues and Solutions: Unit 2 Lab 8 Activity 2: Water Analysis
- Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant
- Environmental Issues and Solutions: Unit 2 Lab 8 Activity 4: Observing the Effects of Acid Rain and Other Pollutants on Plants
- Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet
- Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey
- Environmental Issues and Solutions: Unit 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web
- Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems
- Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population
- Environmental Issues and Solutions: Unit 3 Lab 9 Activity 1: Food Web Organization
- Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids
- Environmental Issues and Solutions: Unit 4 Lab 12 Activity 1: Modeling a Water Treatment Plant
- Environmental Issues and Solutions: Unit 4 Lab 12 Activity 2: Biological Treatment of Pollution
- Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem



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|  |  | <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> |
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