Inquiry Investigations™ Environmental Issues and Solutions MODULE - 1287226

Grades: 7-10

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Illinois Learning Standards Science Grade 7

Grade 7			
STATE GOAL / STRAND	IL.11.	Inquiry and Design: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.	
STATE GOAL / LEARNING STANDARD	11.A.	Know and apply the concepts, principles and processes of scientific inquiry.	
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.A.3b.	 Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge 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 11 Activity 2: Determining the Carrying Capacity of a Population 	
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.A.3c.	 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 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 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
LEARNING STANDARD /	11.A.3d. E	xplain the existence of unexpected results in a data set.
PERFORMANCE DESCRIPTOR		 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 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen LEARNING STANDARD / 11.A.3e. Use data manipulation tools and quantitative (e.g., mean, mode, simple **PERFORMANCE** equations) and representational methods (e.g., simulations, image processing) to analyze measurements. **DESCRIPTOR** 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 2: Cleaning Up Shore Environments 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 2: Observing Air Pollution Indicators - Lichens Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant 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 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
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	 Interpret and represent results of analysis to produce findings. 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 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen LEARNING STANDARD / 11.A.3g. Report and display the process and results of a scientific investigation. **PERFORMANCE DESCRIPTOR** 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 2: Determining the Carrying Capacity of a Population Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: A Closer Look at Energy Pyramids 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 3: Evaluating the Health of an Ecosystem <li< th=""></li<>
STATE GOAL / STRAND	IL.11.	Inquiry and Design: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.
STATE GOAL /	11.B.	Know and apply the concepts, principles and processes of
LEARNING STANDARD LEARNING STANDARD /	11.B.3b.	technological design. Sketch, propose and compare design solutions to the problem
PERFORMANCE DESCRIPTOR		considering available materials, tools, cost effectiveness and safety.

- 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 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen
LEARNING STANDARD /		e the test results based on established criteria, note sources of
LEARNING STANDARD / PERFORMANCE DESCRIPTOR		
	•	Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population
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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 LEARNING STANDARD / 11.B.3f. Using available technology, report the relative success of the design based on the test results and criteria. **PERFORMANCE DESCRIPTOR** 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 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen
STATE GOAL / STRAND	IL.12.	Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.
STATE GOAL / LEARNING STANDARD	12.A.	Know and apply concepts that explain how living things function, adapt and change.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.A.3a.	Explain how cells function as building blocks of organisms and describe the requirements for cells to live.
		 Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.A.3c.	Compare and contrast how different forms and structures reflect different functions (e.g., similarities and differences among animals that fly, walk or swim; structures of plant cells and animal cells).
		 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 2 Lab 7 Activity 1: Soil Analysis 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 2: Determining the Carrying Capacity of a Population Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem STATE GOAL / STRAND IL 2.B. STATE GOAL / STRANDARD IZ 2.B. LEARNING STANDARD LEARNING STANDARD LEARNING STANDARD IZ 3.B. Interact with each other and with their environment. Identify and classify biotic and abiotic factors in an environment that affect population density, habitat and placement of organisms in an energy pyramid. Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill Environmental Issues and Solutions: Unit 1 Lab 3 Activity 1: Biodegradation 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: Indentifying Airborne Pollutants Environmental Issues and Solutions: Unit 1 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Soil Porosity and Permeability Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured 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: Dissect			
STATE GOAL / LEARNING STANDARD 12.B. Know and apply concepts that describe how living things interact with each other and with their environment. LEARNING STANDARD / PERFORMANCE DESCRIPTOR 12.B.3a. PENVIRONMENT I SUBJECT IN THE STANDARD / PERFORMANCE DESCRIPTOR 12.B.3a. PENVIRONMENT I SUBJECT IN THE SUBJ			 Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population Environmental Issues and Solutions: Unit 4 Lab 12
STATE GOAL / LEARNING STANDARD 12.B. Know and apply concepts that describe how living things interact with each other and with their environment. 12.B. Interact with each other and with their environment. 12.B. Identity and classify biotic and abiotic factors in an environment that affect population density, habitat and placement of organisms in an energy pyramid. • Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill • Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Biodegradation 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 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 2: Soil Porosity and Permeability • Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the Lobo of a Water Pollutant Activity 3: Determining the Lobo of a Water Pollutant • Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the Lobo of a Water Pollutant • Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the Lobo of a Water Pollutant • Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet • Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet	STATE GOAL / STRAND	IL.12.	
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affect population density, habitat and placement of organisms in an energy pyramid. 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 2: Soil Porosity and Permeability 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 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 3: Determining the LD50 of a Water Pollutant Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet		12.B.	interact with each other and with their environment.
Environmental Issues and Solutions: Unit 3 Lab 10	LEARNING STANDARD / PERFORMANCE	12.B.3a.	Identify and classify biotic and abiotic factors in an environment that affect population density, habitat and placement of organisms in an energy pyramid. • 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 2: Cleaning Up Shore Environments • Environmental Issues and Solutions: Unit 1 Lab 4 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 2: Observing Air Pollution Indicators - Lichens • Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens • 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

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 Teacher Resource CD: Air, Water, and Soils Teacher Resource CD: Ecosystems, Energy, and Biodiversity Teacher Resource CD: Environmental Issues Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen LEARNING STANDARD / 12.B.3b. Compare and assess features of organisms for their adaptive, competitive and survival potential (e.g., appendages, reproductive PERFORMANCE rates, camouflage, defensive structures). **DESCRIPTOR** Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants 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 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 Teacher Resource CD: Ecosystems, Energy, and **Biodiversity** STATE GOAL / STRAND IL.12. Concepts and Principles: Understand the fundamental

		concepts, principles and interconnections of the life, physical and earth/space sciences.
STATE GOAL / LEARNING STANDARD	12.C.	Know and apply concepts that describe properties of matter and energy and the interactions between them.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.C.3a.	 Explain interactions of energy with matter including changes of state and conservation of mass and energy. Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge 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 9 Activity 1: Food Web Organization Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids Teacher Resource CD: Ecosystems, Energy, and Biodiversity
STATE GOAL / STRAND	IL.12.	Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical
STATE GOAL /	12.E.	and earth/space sciences. Know and apply concepts that describe the features and
LEARNING STANDARD	12.L.	processes of the Earth and its resources.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.E.3a.	Analyze and explain large-scale dynamic forces, events and processes that affect the Earth's land, water and atmospheric systems (e.g., jetstream, hurricanes, plate tectonics). • Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill • Teacher Resource CD: Air, Water, and Soils
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.E.3b.	Describe interactions between solid earth, oceans, atmosphere and organisms that have resulted in ongoing changes of Earth (e.g., erosion, El Nino). • 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 2: Observing Air Pollution Indicators - Lichens 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 3: Determining the LD50 of a Water Pollutant

		 Teacher Resource CD: Air, Water, and Soils Teacher Resource CD: Environmental Issues
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.E.3c.	Evaluate the biodegradability of renewable and nonrenewable natural resources.
		 Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill 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 Teacher Resource CD: Environmental Issues
STATE GOAL / STRAND	IL.12.	Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.
STATE GOAL / LEARNING STANDARD	12.F.	Know and apply concepts that explain the composition and structure of the universe and Earth's place in it.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.F.3b.	Describe the organization and physical characteristics of the solar system (e.g., sun, planets, satellites, asteroids, comets).
		 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
STATE GOAL / STRAND	IL.13.	Science, Technology, and Society: Understand the relationships among science, technology and society in historical and contemporary contexts.
STATE GOAL / LEARNING STANDARD	13.A.	Know and apply the accepted practices of science.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	13.A.3a.	Identify and reduce potential hazards in science activities (e.g., ventilation, handling chemicals).
		 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 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen LEARNING STANDARD / 13.A.3b. Analyze historical and contemporary cases in which the work of science has been affected by both valid and biased scientific practices. **PERFORMANCE DESCRIPTOR** 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
- Teacher Resource CD: Environmental Issues
- Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen

STATE GOAL / STRAND IL.13.

3. Science, Technology, and Society: Understand the relationships among science, technology and society in

historical and contemporary contexts.

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STATE GOAL / LEARNING STANDARD	13.B.	Know and apply concepts that describe the interaction between science, technology and society.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	13.B.3a.	 Identify and explain ways that scientific knowledge and economics drive technological development. 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
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	13.B.3d.	 Analyze the interaction of resource acquisition, technological development and ecosystem impact (e.g., diamond, coal or gold mining; deforestation). 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 8 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

LEARNING STANDARD / PERFORMANCE	 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 Teacher Resource CD: Environmental Issues Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen
	 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
	Teacher Resource CD: Environmental Issues
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	Apply classroom-developed criteria to determine the effects of policies on local science and technology issues (e.g., energy consumption, landfills, water quality).
	 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
•	Teacher Resource CD: Environmental Issues
•	Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen
Illinois	

Illinois Learning Standards

Science Grade 8

Grade

STATE GOAL / STRAND	Inquiry and Design: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.
STATE GOAL / LEARNING STANDARD	Know and apply the concepts, principles and processes of scientific inquiry.

LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.A.3b. Cond	 Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge 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 11 Activity 2: Determining the Carrying Capacity of a Population
LEARNING STANDARD / PERFORMANCE DESCRIPTOR		 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 3: Examining Oil-Degrading Microbes Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: The Greenhouse Effect and Global Warming Environmental Issues and Solutions: Unit 2 Lab 6 Activity 1: Modeling Salt Runoff Discharge Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: 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 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 LEARNING STANDARD / 11.A.3d. Explain the existence of unexpected results in a data set. **PERFORMANCE DESCRIPTOR** 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 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen 11.A.3e. Use data manipulation tools and quantitative (e.g., mean, mode, simple LEARNING STANDARD / equations) and representational methods (e.g., simulations, image **PERFORMANCE** processing) to analyze measurements. **DESCRIPTOR** 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 2: Cleaning Up Shore Environments 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 2: Observing Air Pollution Indicators -Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant 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 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 LEARNING STANDARD / 11.A.3f. Interpret and represent results of analysis to produce findings. **PERFORMANCE DESCRIPTOR** 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

LEARNING STANDARD / PERFORMANCE DESCRIPTOR	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 11.A.3g. Report and display the process and results of a scientific investigation. Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Biodegradation in a Landfill 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 1: Identifying Airborne Pollutants
DESCRIPTOR	 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
	Activity 1: Identifying Airborne Pollutants

		 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
		y ₃ .
STATE GOAL / STRAND	IL.11.	Inquiry and Design: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.
STATE GOAL / LEARNING STANDARD	11.B.	Know and apply the concepts, principles and processes of technological design.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.B.3b.	Sketch, propose and compare design solutions to the problem considering available materials, tools, cost effectiveness and safety.
		 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
		WarmingEnvironmental Issues and Solutions: Unit 1 Lab 5

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 LEARNING STANDARD / 11.B.3e. Evaluate the test results based on established criteria, note sources of error and recommend improvements. **PERFORMANCE DESCRIPTOR** 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 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen

PERFORMANCE DESCRIPTOR

LEARNING STANDARD / 11.B.3f. Using available technology, report the relative success of the design based on the test results and criteria.

> 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

		Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen
STATE GOAL / STRAND	IL.12.	Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.
STATE GOAL / LEARNING STANDARD	12.A.	Know and apply concepts that explain how living things function, adapt and change.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.A.3a.	Explain how cells function as building blocks of organisms and describe the requirements for cells to live.
		 Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population
		 Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.A.3c.	Compare and contrast how different forms and structures reflect different functions (e.g., similarities and differences among animals that fly, walk or swim; structures of plant cells and animal cells).
		 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 2 Lab 7 Activity 1: Soil Analysis
		 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 2: Determining the Carrying Capacity of a Population
		 Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem
STATE GOAL / STRAND	IL.12.	Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical
STATE GOAL /	12.B.	and earth/space sciences. Know and apply concepts that describe how living things
LEARNING STANDARD LEARNING STANDARD /	12.B.3a.	interact with each other and with their environment. Identify and classify biotic and abiotic factors in an environment that
PERFORMANCE DESCRIPTOR	.E.D.od.	affect population density, habitat and placement of organisms in an energy pyramid.
		 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

		Teacher Resource CD: Air, Water, and Soils
		Teacher Resource CD: Ecosystems, Energy, and
		Biodiversity Teacher Resource CD: Environmental Issues
		Virtual Laboratory: The Effect of Temperature on
		Dissolved Oxygen
LEARNING STANDARD / PERFORMANCE DESCRIPTOR		Compare and assess features of organisms for their adaptive, competitive and survival potential (e.g., appendages, reproductive rates, camouflage, defensive structures).
		 Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants
		 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 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
		Teacher Resource CD: Ecosystems, Energy, and Biodiversity
STATE GOAL / STRAND		Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.
STATE GOAL / LEARNING STANDARD		Know and apply concepts that describe properties of matter and energy and the interactions between them.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.C.3a.	Explain interactions of energy with matter including changes of state and conservation of mass and energy.
		 Environmental Issues and Solutions: Unit 1 Lab 5 Activity 1: Modeling Salt Runoff Discharge
		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 9
		Activity 1: Food Web OrganizationEnvironmental Issues and Solutions: Unit 3 Lab 9

STATE GOAL / STRAND STATE GOAL / LEARNING STANDARD LEARNING STANDARD / PERFORMANCE	IL.12. 12.E. 12.E.3a.	that affect the Earth's land, water and atmospheric systems (e.g.,
DESCRIPTOR LEARNING STANDARD /	12.E.3b.	Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill Teacher Resource CD: Air, Water, and Soils Describe interactions between solid earth, access atmosphere and
PERFORMANCE DESCRIPTOR		 Describe interactions between solid earth, oceans, atmosphere and organisms that have resulted in ongoing changes of Earth (e.g., erosion, El Nino). 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 2: Observing Air Pollution Indicators - Lichens 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 3: Determining the LD50 of a Water Pollutant Teacher Resource CD: Air, Water, and Soils Teacher Resource CD: Environmental Issues
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.E.3c.	 Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill 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 Teacher Resource CD: Environmental Issues
STATE GOAL / STRAND	IL.12.	Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical

		and earth/space sciences.
STATE GOAL / LEARNING STANDARD	12.F.	Know and apply concepts that explain the composition and structure of the universe and Earth's place in it.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.F.3b.	Describe the organization and physical characteristics of the solar system (e.g., sun, planets, satellites, asteroids, comets).
		 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
STATE GOAL / STRAND	IL.13.	Science, Technology, and Society: Understand the relationships among science, technology and society in historical and contemporary contexts.
STATE GOAL / LEARNING STANDARD	13.A.	Know and apply the accepted practices of science.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	13.A.3a.	Identify and reduce potential hazards in science activities (e.g., ventilation, handling chemicals).
DESCRIPTOR		 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 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	 Analyze historical and contemporary cases in which the work of science has been affected by both valid and biased scientific practices. 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
		 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 2: Biological Treatment Plant Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem Teacher Resource CD: Environmental Issues Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen
STATE GOAL / STRAND	IL.13.	Science, Technology, and Society: Understand the
STATE GOAL / STRAND	IL. 13.	relationships among science, technology and society in historical and contemporary contexts.
STATE GOAL / LEARNING STANDARD	13.B.	Know and apply concepts that describe the interaction between science, technology and society.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	13.B.3a.	Identify and explain ways that scientific knowledge and economics drive technological development.
		 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
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	13.B.3d.	Analyze the interaction of resource acquisition, technological development and ecosystem impact (e.g., diamond, coal or gold mining;

deforestation).

- 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 1 Activity 2: Biological Treatment of Pollution Environmental Issues and Solutions: Unit 4 Lab 1 Activity 3: Evaluating the Health of an Ecosystel Teacher Resource CD: Environmental Issues Virtual Laboratory: The Effect of Temperature of Dissolved Oxygen 	12 m
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	Identify advantages and disadvantages of natural resource conserval and management programs. Environmental Issues and Solutions: Unit 4 Lab 1 Activity 1: Modeling a Water Treatment Plant Environmental Issues and Solutions: Unit 4 Lab 1 Activity 2: Biological Treatment of Pollution Environmental Issues and Solutions: Unit 4 Lab 1 Activity 3: Evaluating the Health of an Ecosystel Teacher Resource CD: Environmental Issues 3.B.3f. Apply classroom-developed criteria to determine the effects of police.	12 12 12 m
PERFORMANCE DESCRIPTOR	on local science and technology issues (e.g., energy consumption, landfills, water quality). 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 6 Activity 1: Soil Analysis Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Soil Porosity and Permeability Environmental Issues and Solutions: Unit 2 Lab 6 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	11 22 53 33 33 33 44 55 66 67 77 77

 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 Teacher Resource CD: Environmental Issues Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen

Illinois Learning Standards Science Grade 9

STATE GOAL / STRAND	IL.11.	Inquiry and Design: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.	
STATE GOAL / LEARNING STANDARD	11.A.	Know and apply the concepts, principles and processes of scientific inquiry.	
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.A.4c.	 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 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen LEARNING STANDARD / 11.A.4d. Apply statistical methods to the data to reach and support conclusions. **PERFORMANCE DESCRIPTOR** Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators -Lichens Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured Environmental Issues and Solutions: Unit 2 Lab 8

		Activity 3: Determining the LD50 of a Water Pollutant
		 Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey
		 Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Leaf Litter Ecosystems
		 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
		,,
LEARNING STANDARD / PERFORMANCE	11.A.4e. Form	ulate alternative hypotheses to explain unexpected results.
DESCRIPTOR		 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 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen
	IL.11.	Inquiry and Design: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.
STATE GOAL / LEARNING STANDARD	11.B.	Know and apply the concepts, principles and processes of technological design.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.B.4b.	Propose and compare different solution designs to the design problem based upon given constraints including available tools, materials and time.
		 Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.B.4c.	Develop working visualizations of the proposed solution designs (e.g., blueprints, schematics, flowcharts, cad-cam, animations).
		Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill The state of the s
		 Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.B.4d.	Determine the criteria upon which the designs will be judged, identify advantages and disadvantages of the designs and select the most promising design.
		 Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.B.4e.	Develop and test a prototype or simulation of the solution design using available materials, instruments and technology.
		 Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill Environmental Issues and Solutions: Unit 1 Lab 3
		Activity 2: Cleaning Up Shore Environments

		,
		 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 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web 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
LEARNING STANDARD /	11.B.4f.	Evaluate the test results based on established criteria, note sources of error and recommend improvements.
PERFORMANCE DESCRIPTOR		error and recommend improvements.
		 Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill
LEARNING STANDARD /	11.B.4g.	Using available technology, report to an audience the relative success of
PERFORMANCE DESCRIPTOR		the design based on the test results and criteria.
		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
		Virtual Laboratory: The Effect of Temperature on
		Dissolved Oxygen
STATE GOAL / STRAND	IL.12.	Concepts and Principles: Understand the fundamental
		concepts, principles and interconnections of the life, physical and earth/space sciences.
STATE GOAL /	12.A.	Know and apply concepts that explain how living things
LEARNING STANDARD		
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.A.4b.	function, adapt and change. Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction.
LEARNING STANDARD / PERFORMANCE	12.A.4b.	function, adapt and change. Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction.
LEARNING STANDARD / PERFORMANCE	12.A.4b.	function, adapt and change. Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction. • Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a
LEARNING STANDARD / PERFORMANCE	12.A.4b.	function, adapt and change. Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction. • Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population • Environmental Issues and Solutions: Unit 4 Lab 12
LEARNING STANDARD / PERFORMANCE	12.A.4b.	function, adapt and change. Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction. • Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.A.4b.	Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction. • Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population • Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem Concepts and Principles: Understand the fundamental
LEARNING STANDARD / PERFORMANCE DESCRIPTOR STATE GOAL / STRAND	IL.12.	function, adapt and change. Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction. • Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population • Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR		function, adapt and change. Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction. • Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population • Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences. Know and apply concepts that describe how living things interact with each other and with their environment.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR STATE GOAL / STRAND STATE GOAL / LEARNING STANDARD /	IL.12.	Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction. • Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population • Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences. Know and apply concepts that describe how living things
LEARNING STANDARD / PERFORMANCE DESCRIPTOR STATE GOAL / STRAND STATE GOAL / LEARNING STANDARD	IL.12.	function, adapt and change. Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction. • Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population • Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences. Know and apply concepts that describe how living things interact with each other and with their environment. Compare physical, ecological and behavioral factors that influence interactions and interdependence of organisms.
STATE GOAL / STRAND STATE GOAL / STANDARD LEARNING STANDARD LEARNING STANDARD / PERFORMANCE	IL.12.	Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction. • Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population • Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences. Know and apply concepts that describe how living things interact with each other and with their environment. Compare physical, ecological and behavioral factors that influence
STATE GOAL / STRAND STATE GOAL / STANDARD LEARNING STANDARD LEARNING STANDARD / PERFORMANCE	IL.12.	function, adapt and change. Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction. • Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population • Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences. Know and apply concepts that describe how living things interact with each other and with their environment. Compare physical, ecological and behavioral factors that influence interactions and interdependence of organisms. • Environmental Issues and Solutions: Unit 3 Lab 10 Activity 1: Dissecting an Owl Pellet • Environmental Issues and Solutions: Unit 3 Lab 10
STATE GOAL / STRAND STATE GOAL / STANDARD LEARNING STANDARD LEARNING STANDARD / PERFORMANCE	IL.12.	Function, adapt and change. Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction. • Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population • Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences. Know and apply concepts that describe how living things interact with each other and with their environment. Compare physical, ecological and behavioral factors that influence interactions and interdependence of organisms. • 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
STATE GOAL / STRAND STATE GOAL / STANDARD LEARNING STANDARD LEARNING STANDARD / PERFORMANCE	IL.12.	Function, adapt and change. Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction. • Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a Population • Environmental Issues and Solutions: Unit 4 Lab 12 Activity 3: Evaluating the Health of an Ecosystem Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences. Know and apply concepts that describe how living things interact with each other and with their environment. Compare physical, ecological and behavioral factors that influence interactions and interdependence of organisms. • 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

		 Litter Ecosystems 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 Teacher Resource CD: Ecosystems, Energy, and Biodiversity
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.B.4b.	Simulate and analyze factors that influence the size and stability of populations within ecosystems (e.g., birth rate, death rate, predation, migration patterns).
		 Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill 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 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: Canstructing a Predator-Prey Food Web 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 Teacher Resource CD: Ecosystems, Energy, and Biodiversity Teacher Resource CD: Environmental Issues
STATE GOAL / STRAND	IL.12.	Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.
STATE GOAL / LEARNING STANDARD	12.E.	Know and apply concepts that describe the features and processes of the Earth and its resources.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.E.4a.	Explain how external and internal energy sources drive Earth processes (e.g., solar energy drives weather patterns; internal heat drives plate tectonics).
		 Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming Teacher Resource CD: Air, Water, and Soils
STATE GOAL / STRAND	IL.13.	Science, Technology, and Society: Understand the relationships among science, technology and society in
		historical and contemporary contexts.
STATE GOAL / LEARNING STANDARD	13.A.	Know and apply the accepted practices of science.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	13.A.4a.	 Estimate and suggest ways to reduce the degree of risk involved in science activities. 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 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen Assess the validity of scientific data by analyzing the results, sample LEARNING STANDARD / 13.A.4b. set, sample size, similar previous experimentation, possible **PERFORMANCE** misrepresentation of data presented and potential sources of error. **DESCRIPTOR** 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

Warming

Activity 1: The Greenhouse Effect and Global

		 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
STATE GOAL / STRAND	IL.13.	Science, Technology, and Society: Understand the
		relationships among science, technology and society in historical and contemporary contexts.
STATE GOAL / LEARNING STANDARD	13.B.	Know and apply concepts that describe the interaction between science, technology and society.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	13.B.4a.	Compare and contrast scientific inquiry and technological design as pure and applied sciences.

- 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 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen
LEARNING STANDARD /		e a particular occupation to identify decisions that may be
PERFORMANCE DESCRIPTOR	influen	ced by a knowledge of science.
	•	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

Illinois Learning Standards Science

Grade 10

STATE GOAL / STRAND	IL.11.	Inquiry and Design: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.
STATE GOAL / LEARNING STANDARD	11.A.	Know and apply the concepts, principles and processes of scientific inquiry.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.A.4c.	 Collect, organize and analyze data accurately and precisely. 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
- Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen

DESCRIPTOR	 Environmental Issues and Solutions: Unit 1 Lab 2 Activity 1: Observing Radiation Effects on Plants Environmental Issues and Solutions: Unit 2 Lab 6 Activity 2: Observing Air Pollution Indicators - Lichens Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: Soil Porosity and Permeability Environmental Issues and Solutions: Unit 2 Lab 8 Activity 1: How Water Pollutants Are Measured Environmental Issues and Solutions: Unit 2 Lab 8 Activity 3: Determining the LD50 of a Water Pollutant Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Identifying Owl Prey Environmental Issues and Solutions: Unit 3 Lab 11 Activity 1: Calculating a Biodiversity Index for Lear Litter Ecosystems 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
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	 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 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 2: Observing Air Pollution Indicators - Lichens Environmental Issues and Solutions: Unit 2 Lab 7 Activity 2: 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 La Activity 3: Determining the LD50 of a Water Pollutant Environmental Issues and Solutions: Unit 2 La 	
Environmental Issues and Solutions: Unit 2 La	ab 8
Activity 4: Observing the Effects of Acid Rair Other Pollutants on Plants	
Environmental Issues and Solutions: Unit 3 La Activity 1: Dissecting an Owl Pellet	ab 10
 Environmental Issues and Solutions: Unit 3 La Activity 2: Identifying Owl Prey 	ab 10
Environmental Issues and Solutions: Unit 3 La	
Activity 3: Constructing a Predator-Prey Food Environmental Issues and Solutions: Unit 3 La Activity 1: Calculating a Biodiversity Index for Litter Ecosystems	ab 11
Environmental Issues and Solutions: Unit 3 La Activity 2: Determining the Carrying Capacity Population	
Environmental Issues and Solutions: Unit 3 La Activity 1: Food Web Organization	ab 9
Environmental Issues and Solutions: Unit 3 La Activity 2: A Closer Look at Energy Pyramids	
Environmental Issues and Solutions: Unit 4 La Activity 1: Modeling a Water Treatment Plan	ab 12
Environmental Issues and Solutions: Unit 4 La Activity 2: Biological Treatment of Pollution	
Environmental Issues and Solutions: Unit 4 La Activity 3: Evaluating the Health of an Ecosy	
Virtual Laboratory: The Effect of Temperatu Dissolved Oxygen	
STATE GOAL / STRAND IL.11. Inquiry and Design: Understand the processes of scient inquiry and technological design to investigate question conduct experiments and solve problems.	
STATE GOAL / LEARNING STANDARD 11.B. Know and apply the concepts, principles and processes of technological design.	of
LEARNING STANDARD / PERFORMANCE DESCRIPTOR 11.B.4b. Propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution designs to the design propose and compare different solution design propos	
Environmental Issues and Solutions: Unit 1 La Activity 1: Biodegradation in a Landfill	ab 1
LEARNING STANDARD / PERFORMANCE DESCRIPTOR 11.B.4c. Develop working visualizations of the proposed solution designs blueprints, schematics, flowcharts, cad-cam, animations).	(e.g.,
Environmental Issues and Solutions: Unit 1 La	ab 1
Activity 1: Biodegradation in a Landfill	
Activity 1: Biodegradation in a Landfill Environmental Issues and Solutions: Unit 3 Landfill Activity 2: Determining the Carrying Capacity Population	
 Environmental Issues and Solutions: Unit 3 La Activity 2: Determining the Carrying Capacity 	

		Activity 1: Biodegradation in a Landfill
		Activity 1. blodegradation in a Landini
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.B.4e.	Develop and test a prototype or simulation of the solution design using available materials, instruments and technology.
		 Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill Environmental Issues and Solutions: Unit 1 Lab 3 Activity 2: Cleaning Up Shore Environments
		 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 3 Lab 10 Activity 3: Constructing a Predator-Prey Food Web
		 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
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.B.4f.	Evaluate the test results based on established criteria, note sources of error and recommend improvements.
		 Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	11.B.4g.	Using available technology, report to an audience the relative success of the design based on the test results and criteria.
		 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 Ovd Proven
		Activity 2: Identifying Owl Prey Environmental Issues and Solutions: Unit 3 Lab 10 Activity 2: Construction a Productor Prov. Food Web.
		 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 Transporters
		 Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen
STATE GOAL / STRAND	IL.12.	Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical
		and earth/space sciences.
STATE GOAL / LEARNING STANDARD	12.A.	Know and apply concepts that explain how living things function, adapt and change.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.A.4b.	Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction.
		 Environmental Issues and Solutions: Unit 3 Lab 11 Activity 2: Determining the Carrying Capacity of a
		Population • Environmental Issues and Solutions: Unit 4 Lab 12
		Activity 3: Evaluating the Health of an Ecosystem
STATE GOAL / STRAND	IL.12.	Concepts and Principles: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.
STATE GOAL / LEARNING STANDARD	12.B.	Know and apply concepts that describe how living things interact with each other and with their environment.
LEARNING STANDARD /	12.B.4a.	Compare physical, ecological and behavioral factors that influence

PERFORMANCE DESCRIPTOR	 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 9 Activity 1: Food Web Organization Environmental Issues and Solutions: Unit 3 Lab 9 Activity 2: A Closer Look at Energy Pyramids
	Teacher Resource CD: Ecosystems, Energy, and Biodiversity
LEARNING STANDARD / PERFORMANCE DESCRIPTOR 12.E	 Simulate and analyze factors that influence the size and stability of populations within ecosystems (e.g., birth rate, death rate, predation, migration patterns). Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill 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 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

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		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
		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
		Teacher Resource CD: Ecosystems, Energy, and
		Biodiversity Teacher Resource CD: Environmental Issues
STATE GOAL / STRAND	IL.12.	Concepts and Principles: Understand the fundamental
		concepts, principles and interconnections of the life, physical and earth/space sciences.
STATE GOAL / LEARNING STANDARD	12.E.	Know and apply concepts that describe the features and processes of the Earth and its resources.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	12.E.4a.	Explain how external and internal energy sources drive Earth processes (e.g., solar energy drives weather patterns; internal heat drives plate tectonics).
		 Environmental Issues and Solutions: Unit 1 Lab 4 Activity 1: The Greenhouse Effect and Global Warming
		Teacher Resource CD: Air, Water, and Soils
STATE GOAL / STRAND	IL.13.	Science, Technology, and Society: Understand the relationships among science, technology and society in
		historical and contemporary contexts.
STATE GOAL / LEARNING STANDARD	13.A.	Know and apply the accepted practices of science.
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	13.A.4a.	Estimate and suggest ways to reduce the degree of risk involved in science activities.
		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 2: Examining Oil Degrading Microbes
		 Activity 3: Examining Oil-Degrading Microbes Environmental Issues and Solutions: Unit 1 Lab 4

	 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 2: Determining the Carrying Capacity of a Population 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 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 Laborat
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	Assess the validity of scientific data by analyzing the results, sample set, sample size, similar previous experimentation, possible misrepresentation of data presented and potential sources of error.
	 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
- Virtual Laboratory: The Effect of Temperature on

		Dissolved Oxygen
STATE GOAL / STRAND	IL.13.	Science, Technology, and Society: Understand the relationships among science, technology and society in historical and contemporary contexts.
STATE GOAL / LEARNING STANDARD	13.B.	Know and apply concepts that describe the interaction between science, technology and society.
STATE GOAL /		relationships among science, technology and society in historical and contemporary contexts. Know and apply concepts that describe the interaction between science, technology and society. Compare and contrast scientific inquiry and technological design as pure and applied sciences. • 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
		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
		 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 EcosystemsEnvironmental 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
LEARNING STANDARD / PERFORMANCE	13.B.4b. Analyze a particular occupation to identify decisions that may be influenced by a knowledge of science.
DESCRIPTOR	 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 3: Determining the LD50 of a Water Pollutant 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 Teacher Resource CD: Environmental Issues Virtual Laboratory: The Effect of Temperature on Dissolved Oxygen
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	 Analyze ways that resource management and technology can be used to accommodate population trends. 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 • Teacher Resource CD: Environmental Issues
LEARNING STANDARD / PERFORMANCE DESCRIPTOR	13.B.4d. Analyze local examples of resource use, technology use or conservation programs; document findings; and make recommendations for improvements.
	 Environmental Issues and Solutions: Unit 1 Lab 1 Activity 1: Biodegradation in a Landfill 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 Teacher Resource CD: Environmental Issues
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