

Lesson A1–4

Comprehending Natural Resource Conservation

Unit A. Natural Resources

Problem Area I. Introduction to Natural Resources

Lesson 4. Comprehending Natural Resource Conservation

New Mexico Content Standard:

Pathway Strand: Natural Resources and Environmental Systems

Standard: II: Use effective venues to communicate natural phenomena to the public.

Benchmark: II-A: Personally interpret natural resource phenomena to natural resource users.

Performance Standard: 1. Conduct a workshop, activity or program to interpret an example of natural resource conservation.

Student Learning Objectives. Instruction in this lesson should result in students achieving the following objectives:

1. Explain the importance of conservation and preservation.
2. Identify the effects of humans on the environment.
3. Identify types of natural resource damage.

List of Resources. The following resources may be useful in teaching this lesson:

Recommended Resources. One of the following resources should be selected to accompany the lesson:

Porter, Lynn, et al. *Environmental Science and Technology*. 2nd Edition. Upper Saddle River, New Jersey: Prentice Hall Interstate, 2003. (Textbook and Activity Manual, Chapter 4)

Lee, Jasper. *Natural Resources and Environmental Technology*. Danville, Illinois: Interstate Publishers, Inc., 2000. (Textbook, Chapters 3 and 4)

Other Resources. The following resources will be useful to students and teachers:

Turk, Jonathan and Amos Turk. *Environmental Science*. 3rd Edition. New York: CBS College Publishing, 1984.

Arms, Karen. *Environmental Science*. New York: Holt, Rinehart and Winston, 1996.

List of Equipment, Tools, Supplies, and Facilities

Writing surface
Overhead projector
Transparencies from attached masters
Copies of student lab sheets
Prepared water sample

Terms. The following terms are presented in this lesson (shown in bold italics):

Conservation
Conservationist
Landscape degradation
Pollutant
Pollution
Preservation
Preservationist
Symbiotic relationship

Interest Approach. Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

Prepare a clear bottle or jar with a sample of dirty or colored water. Hide the water sample. When class begins, ask the students if they would like a glass of water. Some will most certainly say yes. At this time take out your water sample and pour some of it into a clear glass or cup. Now ask the student again if he

or she would like a drink. Hopefully they'll say no. If they won't drink it ask them what you should do with it. Should you throw it away? Why or why not? Where should it be disposed? What was wrong with the water? Explain that without careful use and conservation of our resources all our drinking water may look like that some day!

Summary of Content and Teaching Strategies

Objective 1: Explain the importance of conservation and preservation.

Anticipated Problem: Why are conservation and preservation important?

- I. Without conservation and preservation we would not have the natural resources we do today. We wouldn't have fossil fuels to heat our homes or to run our vehicles. Other natural resources needed to feed and clothe us may no longer exist either.
 - A. The wise use of our natural resources is called **conservation**. Conservation is necessary in order to continue to meet our needs and maintain our standard of living. Examples of conservation include avoiding waste, reusing, and recycling. People who study and promote conservation and believe that natural resources should be used responsibly are called **conservationists**.
 - B. Choosing not to use our natural resources is called **preservation**. An example of preserving a natural resource would be to view trees for their beauty rather than use them for paper or to build homes. Someone who believes in and promotes preservation is called a **preservationist**.

Use TM: A1–4A to review the terms covered in this objective.

Objective 2: Identify the effects of humans on the environment.

Anticipated Problem: How do humans affect the environment?

- II. Humans affect the environment in a number of ways. Some ways are positive, others are negative. The best relationship between humans and their environment would be a symbiotic one. A **symbiotic relationship** is a beneficial relationship between different species of organisms.
 - A. People have three basic needs, food, water, and shelter. In order for people to survive they must use natural resources. People need water to drink and bathe in and food to eat. Natural resources are also needed to build houses or for other forms of shelter.
 - B. The best way to use natural resources is to make a plan and use them wisely. Waiting until the water runs out is not the right time to decide what we'll do without it.

Use TM: A1–4B to review the definition of symbiotic relationship. Have the students make a list of things in their environment that they have symbiotic relationships with.

Objective 3: Identify types of natural resource damage.

Anticipated Problem: What are some of the different types of natural resource damage?

- III. The three main types of natural resource damage are pollution, loss and lowered quality. Each of these types of damage are serious and costly to the environment. They are also costly to the people and wildlife that live there.
- A. **Pollution** is the release of hazardous materials into the environment. A **pollutant** is the material that causes pollution. Pollution can cause damage to the environment by causing disease, reducing the growth rate of plants and animals, and by causing reproduction problems in plants and animals.
 - B. Losses can occur in any species or natural resource. One prime example of loss is the loss of soil particles to wind and water erosion. Once these soil particles are gone from an area they cannot be replaced.
 - C. **Landscape degradation** is the reduction of the natural features of the land. This can be the result of mining, using heavy equipment, and the cutting of trees. These activities can cause the land to become less valuable and unappealing to look at.

Use TM: A1–4C to review the three main types of natural resource damage. Have the students think about the things they do outside. Do any of these activities damage the environment? How? What can be done to reduce the damage?

Review/Summary. To review and summarize the information in this lesson, have the students define the terms and answer the anticipated questions.

Application. To apply the objectives in this lesson, refer to Chapter 3 of the *Environmental Science and Technology Activity Manual*.

Evaluation. Use the following sample test to evaluate the students' comprehension of the objectives covered in this lesson.

Answers to Sample Test:

Part One: Matching

1 = a, 2 = c, 3 = b

Part Two: Completion

1. conservation
2. preservation

Part Three: Short Answer

A symbiotic relationship is a beneficial relationship between different species of organisms.
Examples will vary.

Test

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Part One: Matching

Instructions. Match the term with the correct response. Write the letter of the term by the definition.

- a. pollutant b. pollution c. landscape degradation

- _____ 1. Material that causes pollution.
_____ 2. Reduction of the natural features of the land.
_____ 3. Release of hazardous materials into the environment.

Part Two: Completion

Instructions. Provide the word or words to complete the following statements.

1. The wise use of our natural resources is called _____.
2. Choosing not to use our natural resources is called _____.

Part Three: Short Answer

Instructions. Provide information to answer the following questions.

Define symbiotic relationship. Give an example of a symbiotic relationship.

TERMS FOR REVIEW

- ◆ **Conservation: the wise use of our natural resources**
- ◆ **Conservationist: someone who studies and promotes conservation and believes that natural resources should be used responsibly**
- ◆ **Preservation: choosing not to use our natural resources**
- ◆ **Preservationist: someone who believes in and promotes preservation**

REVIEW

A symbiotic relationship is a beneficial relationship between different species of organisms, such as humans and wildlife. The activities of humans influence symbiotic relationships between wildlife. Discuss how destroying a food source can wipe out some wildlife.

REVIEW

Three main types of natural resource damage:

- ◆ **Pollution**
- ◆ **Loss**
- ◆ **Lowered quality**