



Environmental Science

Focus: Environmental Science

Grades K-4

Background:

This lesson will describe the use of water-saving methods to reduce the use of water used for home, lawns, farming and industry and thus increasing water supplies for optimum long-term, economic and social benefits. To accompany this lesson will be a demonstration that will give some ideas how to conserve.

Objectives:

- ✓ Students will discuss the importance of water conservation.
- ✓ Students will be able to identify the different ways to conserve.
- ✓ Students will be able to describe why saving water is important.
- ✓ Children will be able to understand the difference between reusing and recycling water.

Learning outcomes:

Learning outcomes from this lesson parallel the 4th grade Ohio proficiency test.

- ✓ Select instruments, make observations and/or organize observations of an event, object or organism.
- ✓ Identify and/or compare the mass, dimensions and volume of familiar objects in standard and/or non-standard units.
- ✓ Analyze a series of events and/or simple daily or seasonal cycles and predict the next likely occurrence in the sequence.
- ✓ Evaluate a simple procedure to carry out an exploration.
- ✓ Identify and/or discuss the selection of resources and tools used for exploring scientific phenomena.
- ✓ Demonstrate an understanding of safe use of materials and/or devices in science activities.
- ✓ Identify characteristics of a simple physical change.

Environmental Science Cont.

Lesson 1: Overview

Introduce yourself.

Discuss chemical term for water(H₂O).

Discuss what conservation is.

Discuss ways to conserve.

Explain the importance of water conservation.

Material needed for activity 1

Large clear Container

Different color sponges(for variety)

Heavy Black marker

Water

Preparation

Cut sponges into quarters

Fill container with water

Mark water level

Material need for activity 2:

Detergent Bottles

Cereal box

Soda Bottle

Glass bottle

Anything paper, plastic or glass

Papers, water, corn oil, polypropylene pads

Preparation:

Gather product, items that have been made from recycled material

Environmental Science Cont.

Activity 1: Sponge Demo

- ✓ Fill a large clear container of water, mark the level of water in the container at the beginning and after the demonstration.
- ✓ Cut up sponges into several pieces.
- ✓ Each sponge represents a different way to use water.
- ✓ The student will share several ways in which water is used by placing their sponge into the container and observe the water consumption.
- ✓ Then they work in reverse and take the sponges out of the bowl designated to hold all the water used in the world.
- ✓ Finally observe the water level and notice that it is not the same amount that it was when we started out with. Why and discuss.

<http://www.epa.gov/teachers/curriculumwater.htm>

"The appearance of hyperlinks does not constitute endorsement by the U.S. Air Force of this Web site or the information, products, or services contained therein. For other than authorized activities such as military exchanges and morale, welfare and recreation sites, the U.S. Air Force does not exercise any editorial control over the information you may find at these locations. Such links are provided consistent with the stated purpose of this DoD Web site."

Environmental Science Cont.

Lesson 2: Overview

- ✓ Ask students what materials are recyclable
- ✓ Pass out some of the recycled material that you have gathered for the students to view
- ✓ Explain that recycled materials bear the numbers 1,2,3,& 6, and underneath each product there is a triangle which the number sits in. Materials without the number there not recycle materials.
- ✓ Show students the materials you've collected and ask them if they can guess what they were made from. (our wizards have pencils made from recycle money, a piggy bank also from money, a pencil made from recycle blue jeans, a piece of plastic lumber made from recycle plastic and wood and so on)
- ✓ Discuss the term renewable resources
- ✓ Show students products made from renewable resources (we have golf tees made from renewable resources i.e., cornstarch)
- ✓ Discuss preventing pollution to prepare for class activity
- ✓ Recycle more
- ✓ Use both sides of you writing paper

Activity 2: Oil Spill Clean Up

Pass out cup half fill of water

Pour cooking oil into the cups

Hand out the clean up pads (give resource to acquire pads)

Have students place one end of the pad into the cup and watch the oil adhere to the pad leaving the water virtually oil free.

To close our in class demo, we pass pencils, crayons and coloring book all made out of recycle material and explain that most paper products at Wright Patterson AFB are made from recycle material.