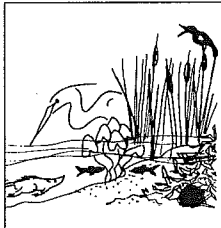


Wetland Metaphors



[From "Wetland Metaphors" in Aquatic Project WILD, Western Regional Environmental Education Council, 1992. Adapted with permission.]

Grade Level
1-12

Subject Areas
Environmental and Earth Science

Duration
30-40 minutes

Setting
Classroom

Skills
Analyzing and interpreting

Charting the Course
Try "Marsh Mystery," "Treatment Plants," "Soak It Up!," "Wetland in a Pan," and others for a more detailed look at wetland functions.

Vocabulary
wetland functions, habitat, filter

Summary

What is a home, a sponge, and a strainer all at the same time?

Consider a selection of common objects as physical metaphors for natural wetland functions.

Objectives

Students will:

- describe characteristics of wetlands.
- appreciate the importance of wetlands to wildlife and humans.
- identify ecological functions of wetlands.

Materials

- *A Mystery Metaphor Container (e.g., large pillowcase, bag, or box) that has an opening just large enough to allow students to reach inside to retrieve an object without seeing the contents*
- sponge
- small pillow
- soap
- egg beater or mixer
- small doll cradle or pictures of nursery items
- sieve or strainer
- paper coffee filter
- bottle of antacid tablets
- small box of cereal or wild rice
- 3-inch x 5-inch cards with magazine pictures representing other wetland functions (see chart at end of activity)

Making Connections

Citizens in our rapidly developing world should understand the benefits of wetlands as resources for humans and other species. This activity brings those benefits to life and encourages a new appreciation of the many important roles wetlands play.

Background

Wetlands provide critical benefits to plants, animals, humans, and the total environment. (See chapter 3.)

Most wetlands, with their abundance of food, vegetative cover (shelter), and water, are rich with diverse wildlife species. Coastal and inland marshes, for example, are the breeding, resting, and wintering habitats for thousands of migratory birds, including ducks, geese, swans, shorebirds, herons, and other wading birds. Many species of fish and shellfish that have important commercial and recreational use reproduce and spend part or all of their life cycle in fertile wetlands. A wide variety of reptiles, amphibians, insects, and crustaceans also breed and live in wetlands. Many mammals depend on wetlands for food, shelter, and water.

Wetland vegetation is highly beneficial. Plants absorb nutrients and help cycle them through the food web. They keep water's nutrient concentrations from reaching toxic levels. Plants produce oxygen through photosynthesis, and they are an important food source for other life forms.

Wetlands have a unique ability to purify the environment. They are extremely effective natural filtering systems. For instance, they trap and neutralize sewage waste, allow silt to settle, and promote the decomposition of many toxic substances.

Wetlands mitigate the harmful effects of sudden and seasonal variations in the water supply. When runoff from rain and spring

thaw is high, wetlands retain excess water, allowing it to drain into streams and rivers and permeate the soil gradually. Healthy wetlands are buffer zones that prevent flooding and erosion. In drier periods, they hold precious moisture long after open bodies of water have disappeared.

As remarkable and resilient as wetlands are, they do have limits. Wetland functions can be compromised when portions are drained and filled for other uses. When a wetland is lost, the effects on wildlife, humans, and overall environmental quality can be significant. Although many wetlands are protected by federal and state laws, there is still a need to create a greater awareness of the importance of wetlands as unique and essential ecosystems.

Procedure

Warm Up

If necessary, provide the class with background information on the natural functions of wetlands and their value as wildlife habitat (See chapter 3.) Use "Wetland in A Pan," p. 212, if you need to give a demonstration. Introduce wetlands through posters, pictures, stories, etc. How do the students feel about wetlands? Do they think wetlands are important? Why? Discuss students' answers and make a list of "pros" and "cons" on the board.

The Activity

1. Tell students that they are going to expand the "pros" list through the use of metaphors. Explain that a metaphor represents a thing or idea through another thing or idea, such as in "a tree is a home," "the world is a stage," or "books are windows of thought." Ask students to provide examples of other metaphors. The household objects

in this activity are tangible symbols of wetland benefits.

2. Divide the class into groups of four or five. Ask a representative from each group to choose an item from the Mystery Metaphor Container. Each group must decide how the object could represent what a wetland is or does. All items in the box have something to do with wetlands.

3. Allow time for students to discuss their answers in groups before each group presents its object and ideas to the class.

Examples are given in the chart below, but students may come up with other clever ideas.

Wrap Up and Action

As students report to the class, discuss each idea and invite others to add their ideas. Add to the list of "pros" on the board. At the end, ask the class to summarize the major roles that wetlands perform. Have students' attitudes and understanding changed since they started the activity?

Assessment

Have students:

- use metaphors to relate the many functions of wetlands to everyday objects.
- identify reasons wetlands are important.

Extensions

Have students prepare displays or short demonstrations on the benefits of wetlands or prepare a wetlands benefits booklet, each student contributing one page.

Resources

Mitsch, William J., and J. G. Gosselink. 1993. *Wetlands*. New York: Van Nostrand Reinhold.

(Note to Teacher: Use the chart below to help prepare your Mystery Metaphor Container, although metaphors other than these might be offered by students.)

Object:	Metamorphic Function
Sponge	Absorbs excess water caused by runoff; retains moisture for a time even if standing water dries up (sponge stays wet even after it has absorbed a spill)
Pillow or bed	A resting place for migratory birds
Egg beater	Mixes nutrients and oxygen into the water
Cradle	Provides a nursery that shelters, protects, and feeds young wildlife
Strainer	Strains silt and debris from water (keeps water supply clean)
Coffee filter	Filters smaller impurities from water (excess nutrients, toxins)
Antacid	Neutralizes toxic substances
Cereal, rice, picture of garden	Provides nutrient-rich foods for wildlife and humans
Soap	Helps cleanse the environment
Picture of zoo	Habitat for diverse wildlife
Picture of resort or motel	Resting or wintering place for migrating waterfowl