

Wetland Metaphors

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Grade level: lower elementary and upper elementary/middle school

Duration: one hour gathering objects and a 30-minute class period

Skills: application, visualization, team work, vocabulary, discussion, and communication/presentation

Subjects: science and language arts, fine arts (with additional activity)

Concepts

- Shorebirds are one part of a healthy functioning ecosystem.
- Both shorebirds and humans depend on clean, healthy ecosystems.
- Wetland ecosystems provide extremely important habitats for shorebirds.

Vocabulary

- Metaphors
- Microorganisms
- Decomposition
- Phytoplankton
- Zooplankton
- Algae
- Nutrients
- Runoff

Overview

Students make comparisons between unrelated objects through metaphors to learn the functions of a wetland.

Objectives

After this activity, students will be able to:

- Use metaphors to describe the basic functions of a wetland.
- Describe the value of wetlands.

Materials

- Large, concealing container (pillowcase, bag, or box)
- Sponge
- Small pillow
- Egg beater
- Toy doll's cradle or baby doll
- Sieve or strainer
- Can of soup or whole-grain cereal
- One copy of *Wetlands Metaphors* activity page per student (included here)

Optional

- Pictures illustrating other comparisons (e.g., gardens = food production for animals; airports/landing and takeoff = places for migrating birds)

Introduction

Coastal and freshwater wetlands provide unique habitats for a great diversity of plants and animals. They are nurseries for countless life forms.

Wetlands often act as buffers in times of both flood and drought. Absorbing overflow from flooding, wetlands often swell with *runoff* water and reduce potential flooding downstream. In drier periods, wetlands hold precious moisture after other ponds and lakes have disappeared.

Wetlands have a unique ability to trap silt and other solids, promoting the *decomposition* of many toxic substances, extra *nutrients*, and the neutralization of sewage wastes by *microorganisms* that live there. Yet it must be remembered that as remarkable as they are, the actions and capacities of wetlands have limits. Too much pollution can destroy a wetland.

Many of the functions of wetlands can be explored through *metaphors*. A metaphor is a direct comparison between two things. It gives a vivid image through direct (that is without using the terms "like" or "such as") comparison. "A tree is a home," "books are windows of thought,"

and "she is a tower of strength" are examples of metaphors. In this activity, a variety of objects represent the characteristics of wetlands in order to help students visualize (that is "paint a picture") and remember the valuable functions of wetlands.

For more information about wetlands and shorebird habitat, read *Shorebirds Depend on a Chain of Healthy Habitats* in the *Shorebird Primer*.

Activity Preparation

1. Prepare a *Mystery Metaphor Container* by collecting the metaphor objects listed above and placing them in a concealing box or paper sack.

Procedure

1. Discuss wetland functions and the meaning of *metaphor* with the class. Metaphors offer a dramatic way of drawing a comparison. For example: "Robin is a chip off the old block" or "Wes is a barrel of laughs."
2. Tell students that objects can be used to represent wetland functions.
3. Now bring out the *Mystery Metaphor Container*. Tell the students that everything in the container can be a metaphor that relates to the functions of wetlands.
4. Divide the class into six different groups. Announce that when it is his or her turn, you want a representative of each group to draw an object from the container.
5. Have the designated student reach into the container and withdraw one object.
6. When each group has an object, ask it to describe and demonstrate the relationships between their

Wetland Mystery Metaphors Chart

Object *Metaphorical Wetland Function: Wetlands...*

Sponge	...absorb excess water which helps to prevent flooding; and absorb excess, harmful nutrients from fertilizers and other sources that may cause contamination downstream (related also to filtering--see "Sieve" below).
Pillow or bed	...provide a resting place for migratory birds; and provide a home for resident microorganisms, fish, birds, and wildlife.
Egg beater or whisk	...mix nutrients and oxygen into water.
Cradle or baby doll	...provide shelter and protection (like a nursery) for young fish, insects, mammals, and birds. Have you seen mosquito larvae, dragonfly nymphs, frog eggs, duck nests, or moose calves in wetlands?
Sieve (strainer)	...can strain or filter debris and suspended material such as soil from erosion out of the water..
Can of soup (or whole-grain cereal)	...provide food for many animals in the form of <i>phytoplankton</i> , <i>algae</i> , tiny <i>zooplankton</i> , insects, and fish.
Soap	...clean polluted water that enters. Of course, even wetlands can be overpowered by too much pollution.
Flower	...are beautiful places.
	Add your own objects and ideas.

object and wetlands. Encourage the students to build on each other's ideas. You can also assist by strengthening their connections. Refer to the *Wetland Mystery Metaphors Chart* for guidelines. Be sure to allow each group time to discuss its ideas before presenting them to the class.

- Ask students to summarize the way wetlands contribute to a health habitat for wildlife. Ask them if their own attitudes about wetlands are different as a result of doing this activity. If so, how?
- Pass out a copy of the *Wetland Metaphors* activity page (included here) to each student to complete.

This page may be used as an evaluation tool.

Additional Activities

Poetry Writing

Have each student write a poem or essay about wetlands using a metaphor. This lesson is especially appropriate after a field trip.

Transforming a Metaphor into a Picture

Have your students use drawing or painting materials to create an actual image of a metaphor (for example, a tree as a home, a person as a chip off the old block, or a wetland as a sponge).

Shorebird Metaphors

Have students brainstorm other

wetland metaphors that demonstrate the value or function of wetlands specifically for shorebirds. Some other metaphors are: airport; bus transfer ticket for migration; restaurant; "singles" meeting place; even a place or ticket that represents the freedom which shorebirds would lose if they were endangered and confined to zoos.

When Nutrients Are Bad

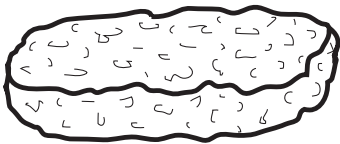
Some minerals that are normally vital to a healthy wetland can sometimes become detrimental. Ask students to research this dilemma. Which nutrients pose a risk when found in excess? Where do these excesses come from? What is the effect when a wetland gets "too much of a good thing"?

Wetland Metaphors

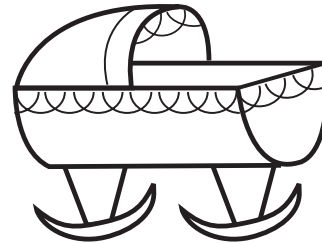
What is a home, a sponge, and a strainer all at the same time?

Metaphors are a way to compare unrelated things, such as "Wes is a barrel of laughs." Below are pictures of items seemingly unrelated to wetlands. Can you figure out how these items compare to a wetland? In other words, think about what each item does. Then compare that item's function to how a wetland might function in that same way. Good luck!

Sponge



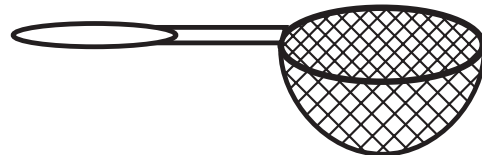
Cradle



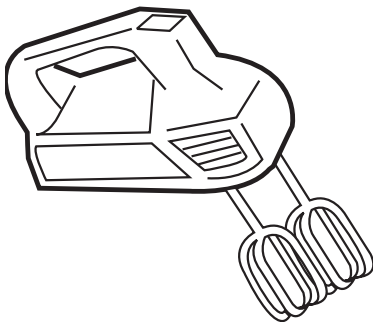
Pillow



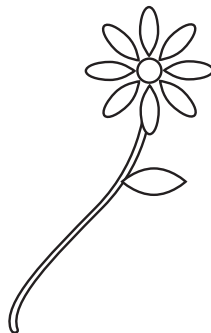
Strainer



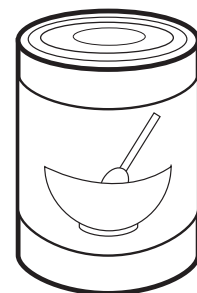
Egg beater



Flower



Can of soup

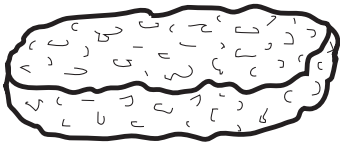


Wetland Metaphors Answer Sheet

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

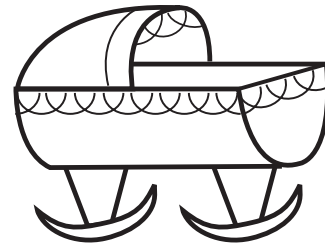
WETLAND

Sponge



help prevent floods,
absorbs water, holds moisture

Cradle



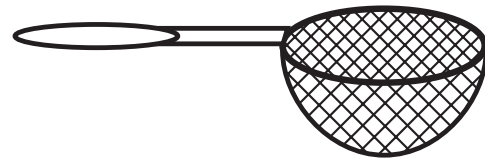
raise young, provide shelter

Pillow



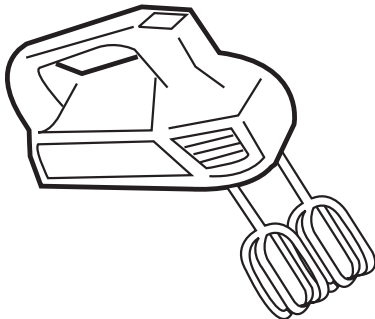
a resting place for migratory birds,
home for resident wildlife

Strainer



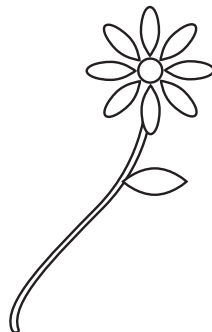
strain out debris and pollution

Egg beater



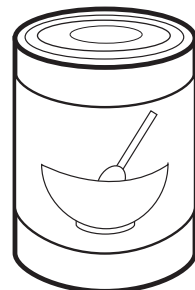
mix and cycle nutrients

Flower



beautiful places

Can of soup



food, nutrients
