

# Wetland Address



[Adapted from "Water Address," Project WET Curriculum and Activity Guide, 1995. Used with permission of The Watercourse and the Western Regional Environmental Education Council.]

**Grade Level**  
5-10

**Subject Areas**  
Life Science, Ecology,  
Geography, Language Arts

**Duration**  
60 minutes

**Setting**  
Classroom

**Skills**  
Analyzing and gathering  
information

**Charting the Course**  
Activities like "Introducing Wetlands" and "Wetland Habitats" should precede this lesson to orient students to wetland environments. Following this lesson, activities such as "Salt Marsh Players" and "Wetland Weirdos" will help illustrate adaptive strategies for wetland survival. "Wet 'n' Wild" addresses the larger issues of habitat and species communities.

**Vocabulary**  
adaptation, wetland,  
hibernate

## Summary

*In times of drought I can survive by creating my own small wetland; what's my wetland address?*

Students identify plants and animals and their wetland habitats by analyzing clues that describe their adaptations, characteristics, and other species trivia.

## Objectives

Students will recognize wetland adaptations and characteristics of some plants and animals.

## Materials

- set of *Wetland Address Cards* for each group of students (can be mounted on cardboard for durability)
- pencils and paper for scoring
- pictures or photographs of organisms listed on clue cards (optional)
- 3-inch x 5-inch index cards
- map of world (optional)

## Making Connections

Most children have seen pictures of cranes and alligators, beavers and pitcher plants. One thing common to all these organisms is that they live in or use wetland environments. Learning about these species helps students appreciate the variety of remarkable strategies for wetland survival.

## Background

Since three quarters of Earth is covered with water, many plants and animals live in wetlands such as bogs, swamps, and marshes. To survive in these water-dominated habitats, living beings have special features, or adaptations. Developed over time, these adaptations help wetland residents make full use of available

nutrients and energy, protect their species against enemies, and cope with different climates.

There are many examples of how animals and plants are suited to live in wetland environments. For example, fish have streamlined bodies and fins to help them maneuver through water. Ducks have webbed feet for swimming and oily feathers to keep from getting soaked. Other organisms have developed ways of breathing while their bodies remain under water. Water lilies anchor themselves on the bottom of ponds and lakes, but send their large leaves to float on the surface to gather light and oxygen.

Behavior patterns are also examples of ways animals have adjusted to wetlands. Migration patterns of birds correlate with wetland areas like prairie pot-holes, which they utilize for food and resting spots. When the water dries up in a pond, some species of frogs bury themselves in the mud and can hibernate for years while waiting for the rains to return. These are just a few of the countless examples of plant and animal wetland adaptations. (See chapter 4.)

## Procedure

### Warm Up

Discuss the importance of adaptations to species' success. What is the longest time students can remember going without water? How would they survive in an environment that lacks oxygen? While some organisms can live without oxygen, and some without light, all living things need water, nutrition, shelter, and other necessities.

Have students list different wetlands around the world (rice paddies, prairie potholes, salt marshes, etc.) and compare the characteristics of these areas. Ask students to list plants and animals they think might be found there, and to describe how these life forms might have adapted to live in and make use of their habitat.

Review the concept of adaptation. Ask students if they have pets or plants that have special adaptations. Fish have many physical adaptations for living in water. Some students may have a cactus or an air plant growing in their homes. Dogs such as spaniels or retrievers are adapted for swimming. What adaptations make these dogs good water dogs? Students may have noticed webbed feet and oily hair, both of which make it easier for the dog to swim.

### **The Activity**

Tell students they're going to play a riddle game in which they try to guess an organism's identity and "wetland address." Arrange students in groups of three to four.

Hand out a set of the enclosed clue cards to each group. Instruct students not to look at the cards before the game starts.

Explain that each card lists four adaptations, characteristic features, or trivia facts about a certain wetland plant or animal. Based on the clues, students will try to guess the plant or animal and the wetland type or location in which it is usually found.

Each group should pick one student to start as their reader. This student will read clues, one at a time and in any order, until someone else in the group can guess the name of the organism

and where it lives (peatland, swamp, marsh, etc.). Answers are listed at the bottom of each card. If photos of the organisms are available, have students place the image on a map of North America to indicate where it lives.

**5. The student who comes closest to guessing both the name of the organism and its wetland address receives points based on the number of clues that were read before he or she got the answer. Assign one student in each group to be scorekeeper and to keep track as follows:**

Only one clue read = four points

Only two clues read = three points

Three clues read = two points

All four clues read = one point

**6. The student who correctly guessed the previous wetland riddle (or came closest) becomes the new reader and begins the clues on the next card. Continue the game until all cards have been read.**

### **Wrap Up and Action**

Discuss how adaptations enable organisms to live in their environment. Have students summarize the adaptations encountered in the game. Remind students that there are thousands of plants, animals, and other organisms not included in this activity, and each one has many adaptations. Have them visit the library and view videos to research additional organisms' adaptations, and then make clue cards for their own game. The game can then be played with new cards, and groups can swap sets for longer sessions. Encourage students to play with friends and family.

## **Assessment**

Have students:

- identify an organism and its wetland environment based on a set of clues describing adaptations, unique features, and characteristics.
- explain how adaptations enable plants and animals to live in diverse wetland environments.
- create clue cards for different organisms and other wetland habitats.

## **Extensions**

Students can create a new organism that could live in an odd location on Earth, in an environment of the future, or in a fictional wetland environment on a different planet. Have them imagine special features or behaviors the organism would need to live in this environment. Encourage them to be creative. They should write a detailed description or draw an explicit picture of the habitat, how the organism blends into the environment, and how it has adapted. Have students critique each other's designs and provide suggestions for improvement. The portraits and descriptions can be posted in a "Wetland Address" gallery. The display should include a description of the organisms and their adaptations. The "Wetland Address" game could be adapted to include these new organisms.

### **K-2 Option**

Show children drawings or magazine pictures of plants and animals that have various wetland-related adaptations. Discuss ways the plant or animal lives in wetlands. Cut each picture into strips and place each cut up picture in a separate envelope.

Divide the class into small groups and give each group an envelope. A student in each group pulls out one strip of paper at a time and tries to guess what the plant or animal is. If she cannot guess, she pulls out a second piece, and so on until she figures out the organism. The group then summarizes the special features or adaptations that help the organism live in its environment. The groups can trade envelopes to continue the activity.

### Resources

Attenborough, David. *The Living Planet*. Boston: Little, Brown & Co., 1984.

Parker, Steve. *Pond and River*. New York: Alfred A. Knopf, 1988.

Parker, Steve, and Jane Parker. *Migration*. New York: Gloucester Press, 1990.

### Notes:



## Wetland Address Cards

- I have dense, oily fur, webbed hind feet, and ears and nostrils that close when under water.

- I sink green branches into my pond to retrieve in winter for food.

- I use my wide tail as a paddle.

- I build a home in water with sticks, and it has an underwater entrance.

*Answer: **Beaver** - lives in streams, ponds, and rivers*

- I can be found on the surface of water.

- I have six wax-coated feet.

- I stand with legs splayed to distribute my weight so I won't break through the water's surface.

- I appear to glide across the water's surface.

*Answer: **Pond skater** - lives in ponds and quiet water*

- My fur makes me look like a shaggy buffalo, but I am actually a member of the goat family.

- I am one of the few mammals to live full time in my high Arctic home.

- My hair is a fine wool that hangs in long skirts almost to my feet and insulates me through the harsh northern winters.

- I have plate-like horns plastered against my skull, with sharp tips to ward off my most dangerous natural enemy, the wolf.

*Answer: **Musk ox** - resident of the tundra peatlands of northern Canada and Greenland*

- I am the largest reptile in North America.

- I can either dig a mud den, or create a small wetland by lashing my tail and digging with my feet and snout, in order to survive periods of drought.

- My eyes are on top of my head, so I can lie submerged and still see above water.

- My skin is a tough, protective leather shield, prized for boots and luggage.

*Answer: **American alligator** - an endangered species living in the Everglades of Florida and other wetlands throughout the south-eastern United States*

- I grow in swamps and am known for my smell.

- I share my name with a mammal, also known for its strong odor.

- I am able to turn energy into heat, so I can warm myself and start spring growth even when night temperatures are still below freezing.

- My flowers may appear before the last ice of winter melts away, and they smell much sweeter than my leaves, which are responsible for my less than attractive name.

*Answer: **Skunk cabbage** - found in shady swamps throughout North America*

- I grow in peat bogs.

- My common name comes from the shape of my leaves, which remind people of something you pour water out of.

- Although I am a plant, I catch and eat insects.

- Sugar-scented pools of water lure my prey, and downward-pointing hairs on my leaves keep insects from climbing to freedom.

*Answer: **Pitcher plant** - found in North American peat bogs*



## Wetland Address Cards

- I am an exotic species (brought to North America from somewhere else). In my case, I came from Argentina.
- I was brought here for my valuable fur, but either escaped or was let free from fur farms, and now live in wetlands in at least 15 U.S. states.
- At first glance I look like another wetland resident who is known for building dams, but the biggest visual difference between us is our tails. Mine is short and stubby.
- I am nocturnal, or active at night, and chew up wetland plant foods much like a muskrat.

Answer: **Nutria** - introduced from South America at the turn of the century, but now lives successfully in the wild from Texas to Alabama, North Carolina to Maryland, and Oregon to Washington, as well as in other states

- In flight my wingspan is 7 1/2 feet across, and I am the tallest North American bird.

- Although I once inhabited a much more widespread area, I now nest in a few isolated Canadian bogs every summer, and migrate south to the Texas coast every winter.
- Not many years ago I was almost extinct due to pesticide poisoning, hunting, and habitat (wetland) destruction. My entire species was down to less than 50 individuals. I am still endangered, but am making a slow comeback.
- At times, and especially during courtship, I dance wildly on long, stilt-like legs.

Answer: **Whooping crane** - an endangered species that summers in Wood Buffalo National Park, Canada, and winters in Aransas National Wildlife Refuge, Texas

- My names describes what I do best, which is to catch fish.
- I live near water, and you'll see me perched where I can watch for my favorite food.
- I am often heard before I am seen, and once you hear my loud, rattly alarm call, you'll never mistake me.
- Other than terns, I am the only bird that will dive headfirst from the air into water.

Answer: **Belted kingfisher** - found throughout North America near rivers, streams, and ponds

Extend this activity by having students research other wetland wildlife and make Address Cards for them. Groups can then exchange cards and keep playing activity rounds. Possible species to start with include: mallard, Canada goose, cattail, bullfrog, mosquito, dragonfly, mink, moose, crayfish, water lily, great blue heron, turtle, salamander, venus fly trap. Come up with more of your own!