

# Wet and Wild

## GENERAL INFORMATION

### OBJECTIVES

Students will explore two freshwater ecosystems and learn about the unique adaptations of animals living in each.

### QUESTIONS

What is an ecosystem? How is a fresh water ecosystem different from a salt water ecosystem? Why would you expect there to be different organisms in a pond and a creek? How are animals and plants adapted to live in still water and fast water ecosystems? How would each ecosystem respond differently to pollution?

### VOCABULARY

Ecosystem, fresh water, salt water, adaptations

### ACTIVITY MATERIALS

Viewing trays, sampling nets, magnifying glasses, identification cards, cones/flags (2), data sheets, clipboards, pencils

## METHODS

### INTRODUCTION

Have the students sit on the lawn between the pond and the creek. Ask: **What is an ecosystem** (it is the combined living and non-living things that interact within a specific area)? Explain that there are many types of ecosystems, but today we are going to focus on water ecosystems. Ask: **What types of water ecosystems do you see here on the property** (the pond and creek)? Explain that these two ecosystems have fresh water. Fresh water is different from salt water because it contains very little salt. Ask: **How are the creek and pond different?** Explain that the water is moving in the creek but it is still in the pond. Explain that this may affect the types of plants and animals that live there because of the water movement and temperature. Ask: **What types of adaptations do you think would be important to have in the moving water found in a creek? What about the still water found in a pond?** Discuss that moving water adaptations include the following: flattened body shapes to allow organisms to move into small spots between rocks, eggs glued to stones, tiny hooks on legs to hold on to rocks, strong swimmers, and hard bodies to protect against crashing into rocks. Still water adaptations include the following: soft bodies, large size, slow swimmers, more plants because they do not drift, and good diving ability.

## Teacher's Corner

### Grade Level(s)

3<sup>rd</sup> - 5<sup>th</sup>

### State Performance Indicators

#### SPI 0307

- 2.1: Distinguish between living and non-living things.
- 2.2: Determine how plants and animals compete for resources such as food, space, water, air, and shelter.
- 3.1: Identify the basic needs of plants and animals.
- 3.2: Recognize that animals obtain their food by eating plants and other animals.
- 5.1: Investigate an organism's characteristics and evaluate how these features enable it to survive.

#### SPI 0407

- 2.1: Recognize the impact of predation and competition on an ecosystem.
- 5.1: Determine how a physical or behavioral adaptation can enhance the chances of survival.
- 5.2: Infer the possible reasons why a species became endangered or extinct.

#### SPI 0507

- 2.1: Describe the different types of nutritional relationships that exist among organisms.
- 2.3: Use information about the impact of human actions or natural disasters on the environment to support a simple hypothesis, make a prediction, or draw a conclusion.
- 5.1: Identify physical and behavioral adaptations that enable animals such as , amphibians, reptiles, birds, fish, and mammals to survive in a particular environment.

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### ACTIVITY

Divide the students into teams of two to four and explain that they are going to play a game. Explain that they are going to receive identification cards with pictures of plants and animals that live in the creek or the pond. It is their job to guess who belongs in each ecosystem. Remind them to think about the adaptations discussed earlier. Give each group several identification cards and tell them to place each card next to the proper cone/flag that marks the pond or the creek. Give the students five minutes to figure out where the cards go. When they are finished, have them sit down and leave the cards at each marker.

Next, explain that they are going to explore each of these ecosystems to figure out if they were correct. Provide each group of students with viewing trays, sampling nets, magnifying glasses, data sheets, clipboards, and pencils. Bring the whole group over to the pond and give them 15-20 minutes to explore. Point out the different adaptations discussed for still water. Make sure that the students complete their data sheets returning collected plants and animals to the pond. Then, bring the group over to the creek and give them 15-20 minutes to explore. Point out the different adaptations discussed for moving water. Again, be sure to have them complete their data sheets before finishing. After they have returned any collected plants and animals back to the creek, bring the group back over to the markers. As a group, compare the placement of the cards to the results from their data sheets. Encourage participation by allowing students to move the card to the correct marker. Ask: **How do you think pollution will affect the pond differently than the creek?** Explain that it will move through the creek faster than the pond, so there may be more damage in the pond. However, there are more plants in the pond to absorb the pollution.

### DISCUSSION

Review the following points: What are some living things found in the pond? What are some of the living things found in the creek? What are some of the adaptations we learned today? Why are these adaptations important? How do the animals we found interact with the other living things in the pond? How do you think pollution would impact the living things we found in the pond?

### WRAP-UP

Allow the students to collect the cards and return them to the guide. Collect the data sheets.

### BRINGING IT TO THE CLASSROOM

Using the data sheets, write the names of the different animals and insects on the board. Add some additional names of mammals, reptiles, and birds found in fresh water ecosystems (heron, muskrat, beaver, otter, snake, turtle, frog, etc.). Explain that animals are classified as vertebrate (backbone) or invertebrate (no backbone). Allow the students to guess how each animal on the board is classified. Additional classifications for mammal, amphibian, insect, reptile, fish, and bird may also be made. After describing the characteristics of each, allow the students to guess which animals are mammals, etc.

### ACKNOWLEDGEMENTS

- Copyright © 2008 Healing Stones Foundation. All rights reserved.
- Activity developed by Melissa Squirlock; August 2007.
- A Practical Guide for the Amateur Naturalist. Gerald Durrell. Published by Alfred A. Knopf, New York, 1988.