

At Waters Edge

Recommended for Grades 2-5
Program Length: 1-1/2 Hours
Location: Oak Hill Trailhead, Peninsula

'At Waters Edge' is designed to stand alone or be combined with 'Among the Trees' as part of the 'Naturally Diverse Field Trip Package'. Students will gain a better understanding of how a pond is a community of interacting members. Students will also learn how various members as well as the community itself changes over time. Finally, we hope to help students develop a heightened sense of appreciation and respect for the pond community and its members.

Learner Outcomes

Students will:

1. List at least five members of the pond community.
2. Give at least two examples of how pond community members interrelate.
3. Describe the water cycle.
4. Define "community."
5. Describe the adaptations of at least two pond animals for life in the pond.
6. Define "metamorphosis" and give an example of an animal which undergoes it.
7. Describe how the pond might appear in the future.

Program Description

The program begins with a large group welcome to the national park and an introduction to the program. Students then participate in a hike with a group leader (10-15 students per group).

The instructor will introduce the hike by reviewing or introducing the concept of a pond community. The students will then take a short hike to the pond. When the group reaches the pond, they will review the water cycle and may discuss concepts such as groundwater seepage, run-off, evaporation, succession.

The students will learn how to use equipment to pond dip and discover animals in the water. Students will then have about twenty minutes for pond-dipping in small groups. Any animals that the students find will be put in boxes and jars, and they will use field guides and charts to identify the animals. Students will share with each other what they have found at the end of the activity. Before the return hike everything extracted will be returned to the pond.

The program is concluded with an exercise designed to help students understand how all members of the pond community are connected to one another.

***The following Ohio Academic Content Standards will be addressed during
At Water's Edge***

Science Benchmarks:

K – 2 Life Science

- A. Discover that there are living things, non-living things and pretend things, and describe the basic needs of living things (organisms).
- B. Explain how organisms function and interact with their physical environment.
- C. Describe similarities and differences that exist among individuals of the same plants and animals.

3 – 5 Life Science

- B. Analyze plant and animal structures and functions needed for survival and describe the flow of energy through a system that all organisms use to survive.
- C. Compare changes in an organism's ecosystem/habitat that affect its survival.

Grade Level Indicators:

Grade 2

Life Sciences – Characteristics and Structure of Life

1. Explain that animals, including people, need air, water, food, living space and shelter; plants need air, water, nutrients (e.g., minerals), living space and light to survive.
2. Identify that there are many distinct environments that support different kinds of organisms.
3. Explain why organisms can survive only in environments that meet their needs. (e.g. Organisms that once lived on Earth have disappeared for different reasons such as natural forces or human-caused effects.)

Life Sciences – Heredity

1. Compare similarities and differences among individuals of the same kind of plants and animals, including people.

Life Sciences – Diversity and Interdependence of Life

1. Explain that food is a basic need of plants and animals (e.g. plants need sunlight to make food and grow, animals eat plants and/or other animals for food, food chain) and is important because it is a source of energy (e.g. energy used to play, ride bicycles, read, etc.).
2. Investigate the different structures of plants and animals that help them live in different environments (e.g. lungs, gills, leaves and roots).
3. Compare the habitats of different kinds of Ohio plants and animals and some ways animals depend on plants and each other.

At Water's Edge

Grade Level Indicators - continued

Grade 3

Life Sciences – Heredity

1. Compare the life cycles of different animals including birth to adulthood, reproduction and death (e.g., egg-tadpole-frog, egg-caterpillar-chrysalis-butterfly).

Life Sciences – Diversity and Interdependence of Life

1. Relate animal structures to their specific survival functions (e.g., obtaining food, escaping or hiding from enemies).
2. Classify animals according to their characteristics (e.g., body coverings and body structure).
6. Describe how changes in an organism's habitat are sometimes beneficial and sometimes harmful.

Grade 4

Life Sciences – Heredity

1. Compare the life cycles of different plants including germination, maturity, reproduction and death.

Life Sciences – Diversity and Interdependence of Life

2. Relate plant structures to their specific functions (e.g., growth, survival and reproduction)

Grade 5

Life Sciences - Diversity and Interdependence of Life

1. Describe the role of producers in the transfer of energy entering ecosystems as sunlight to chemical energy through photosynthesis.
2. Explain how almost all kinds of animals' food can be traced back to plants.
3. Trace the organization of simple food chains and food webs (e.g., producers, herbivores, carnivores, omnivores and decomposers).
4. Summarize that organisms can survive only in ecosystems in which their needs can be met (e.g., food, water, shelter, air, carrying capacity and waste disposal). The world has different ecosystems and distinct ecosystems support the lives of different types of organisms.
5. Support how an organism's patterns of behavior are related to the nature of that organism's ecosystem, including the kinds and numbers of other organisms present, the availability of food and resources, and the changing physical characteristics of the ecosystem.
6. Analyze how all organisms, including humans, cause changes in their ecosystems and how these changes can be beneficial, neutral or detrimental (e.g., beaver ponds, earthworm burrows, grasshoppers eating plants, people planting and cutting trees and people introducing a new species).