



Quick Facts

Season: Spring (April-May), Summer (June), & Fall (Sept.-Nov.)

Grades: 6th -12th

Program length: 4 hours

Max # of students: 40

Standards Connections:

6th Grade:

6.LS.4 Investigate and use data to explain how changes in biotic and abiotic components in a given habitat can be beneficial or detrimental to native plants and animals.

8th Grade:

8.ESS.3 Research how human consumption of finite natural resources (i.e. coal, oil, natural gas, and clean water) and human activities have had an impact on the environment (i.e. causes of air, water, soil, light, and noise pollution).

9th-12th

B.3.2 Design, evaluate, and refine a model which shows how human activities and natural phenomena can change the flow of matter and energy in an ecosystem and how those changes impact the environment and biodiversity of populations in ecosystems of different scales, as well as, how these human impacts can be reduced.

Env.1.2 Understand and explain that human beings are part of Earth's ecosystems and give examples of how human activities can, deliberately or inadvertently, alter ecosystems.

Env.7.3 Compare and contrast the effects of environmental stressors (i.e. herbicides, pesticides) on plants and animals. Give examples of secondary effects on other environmental components.

Program Description

This program will help participants learn about the importance of water and water quality. Participants will also discover how humans can impact water quality and think about potential solutions to water quality issues.

Program Objectives

Students will:

- Explore a lake ecosystem using canoes and waders
- Conduct sample field tests used by professional for a variety of water quality parameters
- Sample for aquatic macroinvertebrates, learn to identify them, and utilize this data as indicators of water quality

Program Outline

Activity Stations

Students will rotate in groups through four different stations. They will experience two stations before lunch and two after lunch. Stations include:

- a. Wetland Dipping: Students will use waders and nets to dip for aquatic macroinvertebrates in a lake ecosystem.
- b. Wetland Lab: Students will use microscopes and field guides to identify aquatic macroinvertebrates. This data is used to determine the water quality of the lake at the time of the program.
- c. Canoeing: Students will use canoes and a scavenger hunt to do a physical assessment of the health of the wetland.
- d. Testing: Students will practice using field tests for water quality parameters such as dissolved oxygen, pH, and nitrogen.

Vocabulary

- Water quality
- Macroinvertebrate
- Dissolved oxygen
- Turbidity
- Pollution Tolerance Index