

Merry Lea Environmental Learning Center of Goshen College

Water Quality 9th - 12th

Program Description

What, if anything, is wrong with our water? How did it get that way? What can be done about it now? Students address these questions using modern equipment and techniques to conduct water sampling experiments. Explore a lake ecosystem in canoes and waders to assess biological indicators, pollution, siltation and human impacts on water guality.

Program Objectives

Students will:

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

Program Outline

Students rotate in groups through four different activity stations:

- 1. Wetland Dipping: Students use waders and nets to dip for aquatic macroinvertebrates in a lake ecosystem.
- 2. Wetland Lab: Students use microscopes and field guides to identify aquatic macroinvertebrates. Then students explore how this data can be used to determine the water quality of the lake at the time of the program.
- 3. Canoeing: Students partner up and use canoes and scavenger hunts to do a physical assessment of the lake's health.
- 4. Water Quality Testing: Students practice using field tests for water quality parameters like dissolved oxygen, pH and nitrogen.

Vocabulary

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

Quick Facts

Season	Fall: September - November Spring: April - May Summer: June
Grades	9th - 12th
Program Length	4 hours
Maximum # of Students	35 Students

Standards

B.3.3 Evaluate the claims, evidence, and reasoning that the complex interactions in eco- systems maintain relatively consistent numbers and types of organisms in stable conditions and identify the impact of changing conditions or introducing non-native species into that ecosystem.

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.

See Standards Correlations for Water Quality for more academic connections.

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