



Water: We Can't Live Without it

Level: 4th and 5th Grades

PROGRAM DESCRIPTION:

This program focuses on the importance water plays in every living creature's existence, the factors which indicate good water quality and the role wetlands play in helping to store, clean, and buffer our ponds and lakes. The program opens with a slide presentation on the importance on clean water for people and wildlife, and the four major types of freshwater aquatic habitats. Students then rotate through four hands-on activity stations which focus on methods of assessing water quality: Macro Invertebrate Survey, Turbidity & Temperature Survey, Shoreline Assessment of plants and land use in the area, and water testing in the Wet Lab for pH, Dissolved Oxygen, Nutrients (N & P), and hardness.

PROGRAM GOALS:

Each student will participate in a water quality monitoring experience which includes the collection of data in the field and interpreting the data by rating the water quality of the Tobico Lagoon.

PROGRAM OBJECTIVES:

1. Each student will be able to list water as one of the four things every living creature needs to survive.
2. Each student will collect and identify at least four macro invertebrates, which are found in the water.
3. Each student will be able to define the difference between tolerant and intolerant macro invertebrates.
4. Each student will be able to list at least three substances which effect water quality.
5. Each student will be able to explain how to use a secchi disk to measure turbidity.
6. Each student will be able to describe sediment as a pollutant which decreases water quality.
7. Each student will be able to give an example of how man's use of the land could affect water quality.
8. Students will be able to list two indicators of polluted water.
9. Students will be able to describe how wetlands help keep our water clean.

PRE-VISIT SUGGESTIONS:

1. Be sure that every student is dressed for the weather conditions. Layers work best. Our weather can be 10 to 15 degrees cooler near the bay than at your school site. Tell them to wear shoes which can get muddy.
2. Suggested Vocabulary: water, wetland, conservation, macro invertebrate, environment, temperature, sediment, turbidity, photosynthesis, oxygen, carbon dioxide, nutrients, pH, pollutant, tolerant and intolerant.

POST-VISIT SUGESTIONS:

1. Make a chart or table depicting the data collected by each group. Graph the data collected.
2. Draw an aerial view of the Tobico Lagoon.
3. Adopt a Stream! Select a site next to your school, draw up a conservation action plan, conduct a litter clean-up and conduct a school river monitoring day twice a year.
4. Keep a class scrapbook on newspaper articles regarding incidents which affect the water quality of the Saginaw Bay.
5. Reserve the Discovering and Exploring Our Watershed Program for a school site visit.
6. 5th grade classes can follow this program by participating in 5th Grade Fishing for Fun.
7. Teachers attend Project WET or Project WILD workshop and get two books bulging with fun interdisciplinary, cross-referenced, hands-on lesson plans for water studies.

COORDINATING WITH M.E.A.P. SCIENCE OBJECTIVES

Constructing New Scientific Knowledge (C) I.1

e.1, e.2, e.3, e.4, e.5, e.6

Reflecting on Scientific Knowledge (R) II.1

e.1, e.4

Organization of Living Things (LO) III.2

e.1, e.2, e.3, e.4

Heredity (LH) III.3

e.1

Evolution (LE) III.4

e.2

Ecosystems (LEC) III.5

e.1, e.2, e.3, e.4

COORDINATING WITH BAY CITY PUBLIC SCHOOLS SCIENCE CURRICULUM MENCHMARKS:

Ecosystems 4-1, 4-2, 4-3, 4-4

COORDINATING WITH M.E.A.P. SOCIAL STUDIES CONTENT STANDARD BENCHMARKS:

Geographic Perspective

II.1—I.e.2

II.2—I.e.1, I.e.2, I.e.3, I.e.4

II.4—I.e.5

II.5—I.e.1

Civic Perspective

III.3—I.e.2

II.4—I.e.2

Public Discourse and Decision Making

VI.1—I.e.1, I.e.3

