

## Holmes Soil & Water Conservation District Educational Programs 2010

Holmes SWCD strives to offer quality hands-on activities to teach students about soil and water conservation. Classroom presentations and materials are offered at no charge. Materials may be borrowed by the teacher or an SWCD representative may be scheduled to give an in-classroom presentation. Unless otherwise listed, all activities are suitable for a class size of up to 30 students and take one class period. Suggested grade levels are listed but an activity may be modified to accommodate younger or older students with teacher input. With the exception of the stream study, these activities can be used indoors or outdoors. In addition, if you need a presenter for outdoor field trip (to the Holmes

County Trail, for instance), give us a call. If you would like to coordinate with the other teachers at your school to offer the same program to other classes, that is fine, we don't mind multiple demonstrations.

### Science Standards

Information is available to correlate most of these activities to Ohio's K-12 Science Standards. Because the list is so comprehensive, it is not included here, but contact Michelle Wood at 330-674-2811, ext. 3 or [mwood@co.holmes.oh.us](mailto:mwood@co.holmes.oh.us) if you would like the benchmark and grade level indicators for these activities.



### Enviroscape Watershed Model

We all live in a watershed with water pollution originating from many sources. Nonpoint sources contribute a great deal to the pollution in our water bodies. The combined affect of pollution from many small sources can have a real impact on the quality of our shared water resources.

The EnviroScape Watershed/Nonpoint Source is a watershed model that tracks pollution from point and nonpoint sources, including residential areas, forestry, storm water, transportation, recreation, agriculture and construction, storm water drains, factory and a wastewater treatment plant. This hands-on model gets students involved and is a great visual demonstration of nonpoint and point source pollution.

**Grade Level: 3-12**

### The Incredible Journey

Students will be able to describe the movement of water within the water cycle and identify the states of water as it moves through the water cycle by playing a game. Students are asked to tell a story about their incredible journey as a water droplet and the different forms they took (clouds, animals, lakes, rivers, ocean, soil, plants, ground water, glacier). **Grade level: 4-8**

### Water Quality Monitoring/Stream Study

What lives in a stream is an indicator of that stream's water quality. Types of macro-invertebrates cannot tolerate pollution, while others can, so the taxa groups will indicate water quality. Holmes SWCD has kick seine nets, identification keys, flash cards, and other equipment necessary to conduct biological water quality monitoring. Additional time and busing is required unless a stream is within walking distance to the school.

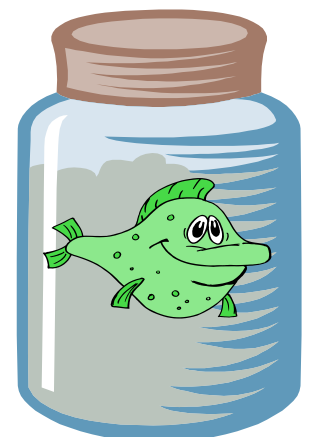
**Grade Level: 3-12**



### Freddie the Fish

Students read what Freddie encounters on his journey down the river and adds the pollutant to Freddie's "stream." Or if Freddie is happy, they do not add any pollutants, and learn about best management practices. Teaches a similar lesson as the EnviroScape, emphasizing the importance of clean water to humans and animals. A fun twist is to ask "How does Freddie feel" after each turn to see how many descriptive words are given.

**Grade Level: 3-6**



## Lessons About Soil

### Soil Salad

What is soil made of?

How is it formed?

Students will simulate the process of soil formation and the five main factors involved (parent material, living organisms, topography, climate & weathering and time).

**Grade level: 3-5**



### Silt: A Dirty Word

*(from Project Wild Aquatic)*

What's the #1 pollutant in Ohio streams? It doesn't come from a factory—it's silt. The major purpose of this activity is to show that aquatic wildlife and its habitat can be influenced by land-based activities in the surrounding watershed.

**Grade level: 3-4**

### What Lives in the Soil/Berlese Funnel

What lives in soil? We'll attempt to find out by using a 2-liter pop bottle and a hot light to see what crawls out of the soil. Because it takes awhile for the heat to work, this activity is used in conjunction with other soil presentations. A microscope makes this a more interesting activity, if available.

**Grade level: K-12**



### Target Splash Erosion

When water hits bare soil, what happens? Students will be surprised what kind of damage can occur and learn about the causes of erosion. Some clean up will be required!

**Grades: 3-5**

### Soil Scientists

Common conservation concerns are identified and students become conservationists to match the best management practice with the resource concern. Possible career opportunities can be incorporated for older students.

**Grades: 6-12**

### Soil Textures

A basic introduction to different types of soils and physical characteristics. Different soil samples are available for students to feel...some cleanup will be required!

**Grades: 3-5**

## Lessons About Conservation

### Web of Life *(from Project Learning Tree)*

Everything is connected, and this activity demonstrates how using a ball of string. What happens when one species disappears, even if it seems insignificant?

**Grade levels: 4-8**

### Forestry trunk

This may be borrowed to supplement discussions about trees and forests. Contains leaf and seed identification kits, tree cookies (to count tree rings), and tree and wood identification. Using a Biltmore (measuring) stick can be a hands-on math problem for upper grade levels.

**Grade levels: 3-12**



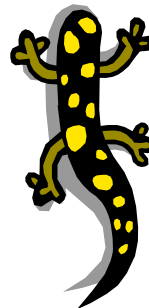
### History of Wildlife and Conservation in Ohio

*(Based on ODNR Division of Wildlife's "Ohio's Wildlife History" poster)*

What wildlife species lived in Ohio in 1803? In 1903? How has the land use changed over the past 200+ years? A Powerpoint presentation highlights the changes in our natural resources since Ohio was settled, and the lessons we've learned from history. We can also bring various animal pelts and skulls to show off.

**Grade levels: 1-12**

### Amphibians



Because they live on land and in water, amphibians are pollution indicators. Salamander larvae in a stream are instant indicators of good water quality. But did you know bullfrogs are considered invasive species in some part of the U.S.? Find out more about amphibians and hear different frog calls.

**Grade levels: K-6**

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