WATER BUGS

Lesson Objective:
Identify at least three animals that live in the water and at the least three animals that live on land. Identify the interdependence of in food chains, food webs, and energy pyramids. Know characteristics of the major classifications groups: monera, protest, fungi, plant and animal kingdoms.

Learning Objectives:
Students will examine water samples to evaluate water quality.

Teacher Tip:
A small ice pack in a cooler will help the water samples survive. **Organisms** can live up to two days in a sealed plastic bag if conditions are right.

Teacher Background:
Conducting a stream quality survey can help you determine how clean a stream is. Counting and identifying insects in a stream can help you answer this question. Insect absence or presence can serve as **indicators** of environmental conditions. **Macroinvertebrates** (visible spineless animals) are easy to find.

Materials

Water samples from various places	Old screen mesh, or dip net
Pans	Tweezers
Magnifying glass	Zipper bags for sealing

Stream insects and crustaceans chart (see macroinvertebrate chart on Tools for Study web page on this site)
Samples Questions:

1. What is water quality?
2. How does water quality affect insects that live in the water?

Learning Procedures:

1. Display poster of stream insects and crustaceans. Point out organisms that live in different types of water quality. Discuss likeness and differences of each organism.
2. Divide students in groups and have students choose an organism to study. Have them make an oral presentation of the likeness and differences of their organisms.
3. After students become familiar with the organisms, the poster can be used to categorize them into the different water types that are their habitats. To reinforce, prepare various cut out pictures and distribute to the students.
4. Using identification poster, the student will name the organism and state the type of water quality it can live in.
5. A day in advance, collect water samples from nearby streams, ponds, and rivers. Put samples in sealed bags or clear jars. Divide students in small groups. Provide pans for each group.
6. Pour water samples into pans. Let students look for organisms and evaluate the quality of the water
7. Given three different water samples, students will observe organisms to determine the quality of the water.

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Resources: Water Quality Indicator Guide: Surface Waters, US Department of Agriculture, Soil Conservation Service SCS-TP-161 (1988) Save our Stream Program, Izzac Walton League of America 1401 Wilson Blvd., Level B Arlington, VA 22209