Stream Study

LIFE SCIENCE STANDARDS

LEVELS K-4	LEVELS 5-8	LEVELS 9-12
Characteristics of organisms	Structure and function in living systems	Interdependence of organisms
Life cycles of organisms	Populations and ecosystems	Behavior of organisms
Organisms and environments	Diversity and adaptations of organisms	

Objectives:

- To observe and understand stream habitat
- To learn how aquatic organisms can be indicators of water quality

Materials:

- Collecting Jars and Tin Pie Plates
- Sieves and Kick Net
- Survey Ribbon (Variety of Colors)
- Thermometer on a String
- Orange
- Stop Watch
- Tape Measure and Yardstick
- Magnifying Glasses
- Waders

Activity:

1. Have a discussion with the students before the trip about what they might expect to find in and around a stream.

2. Point out the physical properties of the stream and discuss its probable developmental history.

3. Help students discover and identify the main rock types in the area.

4. Have students carefully investigate vegetation and other forms of aquatic life found in the stream, especially under stones.

5. Direct students to use the sieves, collecting jars, and other equipment to catch live specimens. Have students take the specimens to the stream bank and look at them with the magnifying glass. (Mud scooped up in strainers and examined in tin pie plates yields many finds). Return all specimens to the stream at the end of the activity. You can mark specific locations with different colors of plastic survey ribbon.

6. Record the time it takes for an orange to float downstream ten feet. Repeat the experiment at various places along the stream. Make comparisons. Discuss changes in habitat that occur as the speed of the stream increases.

7. Choose a cross-section of creek in the middle of the 10-foot section of creek and calculate the cross-section area. Combine this information with water velocity to calculate stream flow.

8. Measure the temperature of the stream at various depths and locations. Compare the results.

9. Use the biotic index to compare life in different stream habitats and the quality of the water.