

Lesson 13

Riparian Explorer

What can be observed along the riparian banks?
What do observations indicate about the health of the river?
What are some special adaptations of macroinvertebrates?

GOAL To understand that observing a riparian bank can provide insight into the waterways health

OBJECTIVES Students will:

- ✓ use observational skills to determine health of river
- ✓ complete worksheet
- ✓ create a creature using different adaptations

MATERIALS observation sheets, pencils, clipboards, adaptation cards (to be copied), a variety of art materials

CORE CURRICULUM CONTENT STANDARDS

- Language Arts 2(1)
- Science 3(2,4,5), 6(3)
- Social Studies 9(1), 10(2-4), 13(5)

VOCABULARY adaptations, riparian bank, observation, macroinvertebrate

PROCEDURES

1. Have students explore an area of the river bank to determine what lives there. Distribute observation sheets for students to record their observations.
2. If the edge of a stream is not available for students to explore, they may explore an area close to the school (or their schoolyard) to determine the type of creatures that live there.
3. After explorations, discuss observations with students.
4. Discuss *macroinvertebrates* and their adaptations upon return to classroom.
5. Distribute two adaptation cards of aquatic creatures in their larva or nymph stage. Review with students what those stages mean (*first stage of life lives in water*).
6. Adaptations may include how the insect moves, how it breathes, how it swims, or other features. Examples of features include a flat body, builds its own house, can stick to rocks with special hooks, has three tails, fills up with water and expels out of abdomen and propels itself through water, breathes through gills, etc. (*Features are listed on a separate sheet for teachers to copy and cut out for students.*)

7. Have students create a three-dimensional aquatic creature based on its adaptations. Have students use a variety of materials such as modeling clay, toilet paper rolls, Styrofoam, construction paper, plastic, and other re-used materials.
8. Have students write a story about their creature. Have them name it, explain its adaptation(s), discuss its habitat, what it eats, etc.

GLOSSARY

adaptations - special features that allow an organism to survive in its environment

macroinvertebrate - an invertebrate animal (animal without a backbone) large enough to be seen without a microscope

observation - the act of noting and recording something, such as a phenomenon, with instruments

riparian bank - of, on, or relating to the banks of a natural course of water

Lesson 13 – Student Sheet 1

Life Along the River (or School grounds)

(If the type of animal or habitat is not applicable to school ground, write down examples of animals that could live in a stream habitat.)

1. Study the plants and vegetation along the river banks (or school). What types of plants hold in the soil and prevent erosion? Students may describe, identify or draw.

2. Look for land and water dwellers (amphibians) – They live in the water when they are young and on land when they are adults.

3. Look for air dwellers – Look for birds or signs of birds and insects.

4. Look for plants and animals that float on or swim in the water.

5. Look for land dwellers (mammals, reptiles, and plants).

6. Look for insects that spend part of their lives in the water and part out of the water.

Has a large appetite	Has hard armor
Lives in a protective house that it builds	Breathes through the surface of its body
Uses three tails at the end of its abdomen to swim	Has paddle shaped legs to help it move through water
Moves by expelling water from its body	Has a flat shape
Is camouflaged	Has feet that feel the vibrations of other creatures
Must live where there is lots of oxygen	Can eat an animal fifty times bigger than itself
Attaches to rocks	Breathes through gills
Hides from other animals	Eats decaying things
Can fly through the water	Avoids bright lights