# *Stream Mapping*

*(20 minute activity)*

## *Objectives*

Students will be able to:

1) Discuss the components of a stream reach
2) Illustrate and map an imaginary reach or the school grounds

## *Materials*

- ❑ Paper
- ❑ Pencil

## *Background*

Cover offers complexity to a stream. The more complexity, the greater the aquatic wildlife and opportunity for protection and food. Mapping is part of the *Habitat Sense* station. Students map the reach of the river or creek. The sketch should contain everything visible to the eye, including cover and habitat types. All features must be labeled. See the Resource Specialist section for more details.

Ask students: what are important sources of cover or shelter that a creek environment provides?

- ❑ Boulder or cobble
- ❑ Woody debris such as brush or logs in the stream or leaning across it
- ❑ Riparian vegetation on stream banks
- ❑ Overhanging vegetation close to the surface of the water
- ❑ Aquatic vegetation growing in the water
- ❑ Undercut banks created by water pressure that sometimes leaves tree roots to hide in
- ❑ *Turbulence* on the surface created by an obstruction such as woody debris or substrate; waterfalls and a change in gradient may also cause turbulence
- ❑ Depth of water; deep enough to hide fish

## *Procedure*

1. Ask students to draw an imaginary stream reach that includes representations of cover. They must be specific and name the aquatic vegetation, riparian vegetation, and substrate classification. Make a second sketch like the first or copy the original for activity #2. On the first drawing, add and label the fish and macroinvertebrates (from *Invert Investigator*) in their appropriate habitats.

## *Procedure* *continued*

2. Practice stream mapping, using the extra copy from activity #1. The cover should already be labeled; students next label the habitats. When mapping during the *Kids in the Creek* program, they will not be including fish or macroinvertebrates, unless they can see them from the bank. The finished product will resemble the map students will draw at the field study site.

3. Ask students to map the school grounds or classroom, labeling features. What would be important information the map needs to convey?

4. During the *Habitat Sense* station, students will also be filling out a *Stream Habitat Survey Form* (Student Section) on a reach of river. This form is a realistic version of what scientists use in the field. It asks for survey data and has very specific protocols. See the Resource Specialist section for the details of this team assignment. Preview the form with students and ask: What is the survey asking them to do? What do the terms mean? Why is it important to know this information? Mapping and stream surveying are part of a fishery biologist s job during field season.

## *Assessment*

Ask the students to:

- ❑ List attributes of poor habitat and the components necessary for a healthy stream ecosystem.

- ❑ Map their living rooms or backyards, giving attention to details.

## *Extensions*

If there is easy stream or river access from school, practice mapping and the use of the *Stream Survey Form* (Student Section) with the class. If not, students could be given a homework assignment to map and survey a creek near their homes. Photos or videos of streams may provide opportunities for practice as well.

- ❑ Familiarize students with station equipment listed in the Resource Specialist section.
- ❑ Give students copies of *Stream Habitat Survey Forms and Stream Habitat Survey Definition and Help Sheet* (on waterproof paper, if available).
- ❑ Provide a blank sheet of paper (preferably waterproof) with no lines for the mapping exercise, one per student.