**MACROINVERTEBRATES**

Materials: Located on middle shelves on left side of storage aisle. The materials are stored in several different trays and boxes but they are all there together.

* White shower curtains to cover tables
* Pink, Green & White 8 ½ by 14 ID sheets with circles for petri dishes
* Couple of dichotomus keys
* Cooler for water and leaf litter from the stream or pond or river you are testing
* Leaf litter (either put leaf bags out 30 days in advance or collect leaf litter from along banks and use sein to collect macroinvertebrates in the water way)
* 2 Aerators to put oxygen in the water to be tested with leaf litter and macroinvertebrates
* Petri dishes
* Plastic spoons and brushes
* Jugs with clean water from the waterway you are testing to fill petri dishes
* Containers to put leaves in at each station
* Strainers
* Magnifiers that fit over petri dishes for each station
* Macroinvertebrate tally sheets (laminated)
* Bag of dry erase marker materials on very end of first set of shelves on left storage aisle.
* Several Large trash bags for used leaf litter
* Paper towels, Clorox wipes, baby wipes, towels, wash clothes, small bucket for cleaning water, dish detergent

Cover each station with a white shower curtain. Each station gets a set of 3 ID sheets (sensitive, somewhat sensitive and tolerant—pink, green and white), several petri dishes filled with water from the stream, a magnifier, spoons, brush, and strainer along with a container of leaf litter.

**Teaching:**

Macroinvertebrates, or “macros” for short, are small aquatic animals and insects in the aquatic larval stage that do not have a backbone and can be seen with the naked eye. These bottom-dwelling animals include crustaceans, snails and worms but most are aquatic insects. Beetles, caddisflies, stoneflies, mayflies, hellgrammites, dragonflies, and damselflies, are among the groups of insects represented in streams.

Macros are an important link in the food web between the producers (leaves, algae) and higher consumers such as fish. Scientists have found macroinvertebrates to be useful for biological water quality monitoring because:

* They are fairly easy to sample and identify.
* They are sensitive to pollution and changes in their habitats.
* They have a relatively long life cycle (several weeks to several years) and so are indicators of water quality over a period of time.
* They are common in most streams or rivers.

Show students how to carefully sift through the leaf litter at their station, putting critters that they find in a petri dish so they can identify. Things to look for—how many legs? How many tails? If a snail does it open to right or left?

After sifting through the litter, students at each station will tally what they found. Information from all station tally sheets is incorporated into a total classroom finding to determine the water quality.