STUDENT GRADE KICK NET

CODE 0172

ASSEMBLY

The Student Grade kick net does not include poles. Poles can be purchased at hardware stores that sell closet rods or PVC pipe. The poles should be 4 feet long and have a maximum diameter of 1.75 inches.

The pockets on the sides of the net are open at one end. The net should be positioned with the pocket openings at the top. Insert a pole into the open end of each pocket. Push the poles to the bottom of the pockets. This will allow the net to be flush with the bottom of the streambed when collecting samples.

STORAGE & CARE

Keep sharp-edged objects (such as sticks, stones, etc.) away from the mesh to avoid damaging it.

After use, rinse the kick net and air-dry completely before storing.

USING THE KICK-NET

The following are general directions for use of the kick-net. Contact local or state natural resource departments, or other monitoring groups, for their recommendations on site selection and location, kick-net use, collection of and guides for identification of local species, and assessment. Obtain any permits that may be required for collecting aquatic organisms from the state agency.

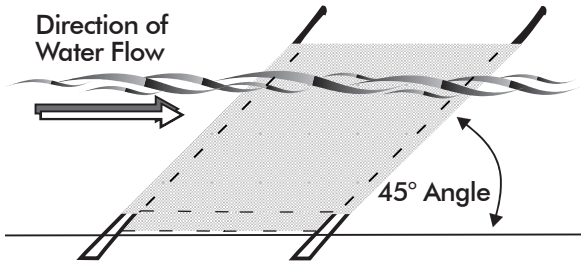
In addition to the kick-net, the following equipment should be used: rubber gloves and boots or waders (to keep hands and feet protected), white collecting pans, forceps or tweezers, magnifying boxes or lenses, buckets, preservative and sample jars (labeled with date, site number, etc., before going into the field).

The sampling site should be selected prior to sampling. Sampling should take place in an area where the stream flows swiftly and the substrate or streambed consists of rocks and stones. This is known as a riffle area. Since these areas provide a good habitat, with plenty of oxygen (via water turbulence) for benthic invertebrates, sampling will ensure a diverse sample.

DIRECTIONS FOR KICK-NET USE

1. Enter the water downstream (against the flow of water) from where the kick-net will be placed. In a small riffle, the best sampling area is at its most upstream position. However, in a large riffle, where several samples are to be taken, it is important to sample at the most downstream portion first and work your way upstream so the substrate in areas upstream will not be disturbed.
2. Hold the kick-net perpendicular to the streamflow at a 45° angle, letting the water flow into the kick-net (see diagram). The bottom of the kick-net must be anchored slightly below the substrate to prevent insects from escaping beneath the kick-net.
3. While one person holds the kick net, a second person should pick up each rock in the sampling area that is several inches in diameter or larger. Each rock should be "cleaned" by holding the rock below the water's surface in front of the kick net. The entire surface of the rock should be scrubbed with the fingers to dislodge all insects, which will then collect in the kick net. Check each rock to be sure that the surface is free of all organisms. Return the rock to its original location. Continue until all rocks in the sampling area have been scrubbed.

   NOTE: The sampling area is usually 3 square feet or 1 square meter. Avoid standing in the sampling area when scrubbing rocks.



4. After all the rocks have been scrubbed, kick, shift, and stir the substrate with your feet. This must be done to the entire sampling area. This action should take no less than 1 minute but may take longer.
5. Remove the kick-net from the stream. The person who scrubbed the rocks should grab the bottom of each pole, and in coordination with the person holding the kick-net, lift it from the water with a scooping motion toward the streamflow. *Do not allow the top of the kick-net to go below the surface of the water, or you may loose part of your sample*. Carry the kick-net to a pre-selected streambank or streamside area for insect removal, identification, and sample collection.
6. Wash the kick-net in the stream to remove any remaining insects or debris. Completely air dry the net before storing.

The following groups can be contacted concerning biological sampling techniques and resource guides for organism identification.

Contact your USEPA Regional Office or State Agency in charge of water quality sampling.

River Watch Network
www.riverwatch.org

Izaak Walton League of America (IWLA)
Save Our Streams Program www.iwla.org

Adopt-A-Stream Foundation
www.streamkeeper.org

SUGGESTED ACCESSORIES AVAILABLE FROM LAMOTTE COMPANY

Code 5882-SA1 - Freshwater Aquatic Macroinvertebrate: Insect Identification Flashcards. 18 full-color flashcards each with photos, line drawing, and identification tips. Fully laminated. Field friendly.

Code 5946 - Freshwater Aquatic Macroinvertebrates Life Cycle & Habitat Flashcards. The 22 full-color cards features photos of both immature and adult insect stages, and detail life cycle and habitat information. A great extension of the Insect Identification cards featured above. Fully laminated the accompanying manual contains facts on insect characteristics, life cycles, taxonomy, classification, food webs, and how macroinvertebrates can be indicators of water quality. Instructions for activities with the cards are included.

Code 5942 - Macro Mania. A classroom activity ideal for introducing the use of stream macroinvertebrates to determine water quality prior to sampling in the field. Six teams sort stacked decks of macroinvertebrates cards representing samples from three stream sites. Six sets of cards and sorting sheets included. Teacher manual with lecture material, data sheets and activity extensions also included. Free Poster!

Call for current pricing.

GENERAL IDENTIFICATION KEYS

The following books can be used to identify insects and other benthic invertebrates:

Lehmkuhl, D. 1979, *How to Know the Aquatic Insects*. Pictured Key Nature Series, W. C. Brown, Co. Dubuque, IA.

Merritt, R.W. and K. W. Cummins (eds). *An Introduction to the Aquatic Insects of North America*. Second edition, Kendall/Hunt Publisher, Dubuque, IA.

McCafferty, W.P. 1981. *Aquatic Entomology: The Fisherman's and Ecologist's Guide to Insects and Their Relatives*. Science Books International, Boston, MA.

Needham, J.G. and P.R. Needham. 1965. *A Guide to the Study of Freshwater Biology*. Fifth edition, Holden-Day, Inc., San Francisco, CA.

Peckarsky, B.L., P.R. Fraissinet, M.A. Penton, and D.J. Conklin, Jr. 1990. *Freshwater Macroinvertebrates of Northeastern North America*. Comstock Publishing Associates, Cornell University Press, Ithaca, NY.

Pennak, R.W. *Freshwater Invertebrates of the United States*. Third edition, John Wiley and Sons, Inc., Somerset, NJ.

Thorp, J.H., and A.P. Covich (eds). 1991. *Ecology and Classification of North American Freshwater Invertebrates*. Academic Press, Harcourt Brace Jovanich, Publishers. San Diego, CA.

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