

## 78-545 LAKE BOTTOM SAMPLING KIT (LAKE AND POND FIELD KIT)



Everything in the field kit can be reused.

Your class can easily obtain samples from lakes and ponds using this equipment. After collection, the samples can be brought back to the classroom or lab for closer examination. (Some teachers prefer to study the organisms in the field so they can be returned to their native habitat after study. The equipment in the Aquatic Invertebrate Lab Kit is excellent for the next phase.) Please use safety precautions when working with children near the water.

Before sampling the bottom, have the students use the thermometer to take the temperature of the water. Some organisms are sensitive to temperature so this can help explain the presence or absence of certain organisms in your study area. It can help you demonstrate that many of the organisms are seasonal and may not be present when the water is warmer or colder. A string can be tied to the thermometer for this. You can mark it with feet or meters ahead of time so the students can take the temperature at various depths. This can provide very useful information if you return to the lake or pond more than once. Of course, the temperature at the bottom will have the most effect on the organisms. Store the thermometer with the bulb down.

The Mighty Grab Sampler can be lowered using the rope from a boat, dock or bridge. Lower the sampler slowly. Lowering it too quickly may cause the organisms in the sediment to respond to the “shock wave” in front of the sampler by moving away. The same precautions should be used when lowering the sampler using the sampling pole. Remove the pole gently. The sampling pole can be used in shallow water. If the students are wading in the water to sample, protect them with waders or high, waterproof boots. They should move slowly and try to sample where they have not disturbed the bottom. The students can do a quantitative study by measuring the volume of sample collected before rinsing it. Complete instructions are included for the Mighty Grab Sampler.

The contents of the Mighty Grab Sampler can be emptied into the wash bucket. This should be rinsed in shallow water to remove the smaller particles and make the sample easier to process. It has 504 micron mesh which is the same standard mesh used by professional scientists (recommended by the U.S. Environmental Protection Agency and the U.S. Geological Survey). Place the bucket in the water and swirl it around, being careful not to let water enter the bucket from the top. Gloves should be used as a precaution.

If you plan to take samples back to the classroom or laboratory and you plan to use them soon, you can just take them back in the sample jars. If the jars are not full, have the students fill them up with water.

When you return to the classroom or lab, remove the lids. The organisms should last for a few days.

If you plan to save them for future use, use 95% or 99% Isopropyl Alcohol as a preservative. If there is a lot of water, the alcohol may be too diluted and the sample will not be as well preserved. Make sure the alcohol gets well mixed with everything in the sample. Be gentle, of course, because many of the organisms are very delicate. Use at least twice as much alcohol as you have sample.

Before using preserved samples, have the students thoroughly rinse off the alcohol and work in water instead. Then re-preserve with fresh alcohol. (We do not recommend using Formalin as a preservative when working with students.)

We recommend using the Fieldmaster Aquatic Invertebrate Lab Kit (78-505) for processing the samples. It contains white pans, entomological forceps, sieves, magnifying glasses, I.D. booklets and other items to help students sort and identify the organisms they have collected.

There are some excellent tools available on the internet for help with identification. We recommend that you visit the following website:

<http://clean-water.uwex.edu/pubs/wwwc/index.html>

You can print out the "Key to Life in the Pond". It is a chart with pictures of the organisms. There is also a booklet you can print out called "Wonderful, Wacky, Water Critters". It is an illustrated booklet with detailed information on over 50 aquatic organisms.