
LIVING THINGS

POND WATER

A pond water sample should contain small, single-celled algae. Pond water samples or algal cultures can be purchased from a biological supply house. You may find that collecting a natural sample is easy, however. A sample of algae scraped from the sides of a well-established freshwater aquarium may work. During spring, summer and fall samples can be collected from outdoor sources such as a greenish farm pond, city park pond, animal water trough or goldfish pond. Look for sources where the water is rich in nutrients and is standing, not flowing.

ELODEA

This cheap common aquarium plant is available from pet stores and biological supply houses. It grows in long strands which tend to float unless anchored. If *Elodea* gets sufficient light, it will live through the entire school year in a classroom aquarium. With care of the plants between use, all of the activities in this curriculum may be done with the same materials. As *Elodea* grows, it will remove animal waste products from the water. Indirect natural light or plant grow lights provide the best spectrum for growth. Aquarium shops may call it *Anachris*.

GOLDFISH AND GUPPIES

Goldfish and guppies are two of the most commonly available freshwater fish. They are incredibly tough and tolerate the uses in this curriculum quite nicely. Goldfish are somewhat easier to use. They may be purchased from biological supply companies, but are frequently available in pet stores or variety stores at a much lower price. Stick to animals in the 1 to 2 in size range for the uses here. Feed them flake food. The guppies prefer a warmer tank than the goldfish, so do not mix the two. Use either goldfish (65 °F) or guppies (75 °F), but not both. Guppies do fine in a freshwater tropical aquarium with other species. They may surprise you by reproducing. In the case of both species, do not subject them to temperatures above those at which they are kept. **DO NOT SUBSTITUTE OTHER KINDS OF FISH FOR USE IN THE EXPERIMENTS IN THIS CURRICULUM.** Goldfish have evolved in low oxygen, high pollution environments.

BRINE SHRIMP

Brine shrimp (*Artemia salina*) are small crustaceans found in salt lakes throughout the world. They are referred to in some places as sea monkeys. They may be purchased as dry eggs which hatch in salt water. The newly hatched animals are truly microscopic. They will not work for these activities. The adults may be purchased live from some pet stores (call ahead of time) and may also be purchased from some biological supply houses. If you are really brave, you might want to try raising the newly hatched animals. Instructions for this project are in the October, 1986, *Tropical Fish Hobbyist*. A mother who has raised six generations of brine shrimp for her son's science fair project fish to feed on was successful after she learned that the eggs had to dry before they hatched for each new generation. Her animals were reproducing sexually, making eggs that could survive cold and drying. Under other environmental conditions, brine shrimp reproduce asexually, making eggs that develop without fertilization into new adults.