

Tadpoles

Raising Tadpoles:

Most amphibians produce their eggs sometimes in the spring, but the exact time depends on the locality, the weather conditions and the kind of amphibian. An individual amphibian egg is small, about the size of an “o” on this page. A protein coat that swells when it comes in contact with water surrounds each egg. This gives the egg mass a gelatin-like appearance and usually makes it much larger than the amphibian that produced it. The number of eggs and the size of the egg mass depend on the species. The egg masses are usually attached to aquatic vegetation or submerged objects in shallow water along the shores of ponds and lakes.

Collecting Eggs:

Amphibian eggs can normally be found a few days after the adults begin their mating calls. (Amphibian eggs can also be purchased from some biological supply companies.) The egg masses are difficult to pick up. The easiest way to collect them is to trim off the attached vegetation and float the egg masses into a submerged bucket or plastic bag. Some additional water should also be collected for future maintenance of the eggs. As soon as possible after being collected, the eggs should be separated into smaller clusters of five to ten eggs and placed in individual containers. The developing embryos are especially susceptible to low amounts of oxygen and, if they are not separated those in the center of the mass will die and eventually contaminate and kill the remaining eggs. Shallow dishes with just enough pond water to cover the eggs are all that is needed for hatching them.

Caring for Tadpoles:

At room temperature, most amphibian eggs will hatch in five to seven days after being produced. Just before hatching, the embryos absorb the last remaining nutrients from the egg, so no food is needed for the next three or four days. At first, newly hatched tadpoles tend to be inactive and cling to the sides of the container (or, in nature, to any submerged object). Then they become more active and begin to feed. The natural food of a frog and toad tadpoles is vegetation and decaying matter. In captivity, they can be fed pieces of lettuce; small bits of boiled egg yolk or goldfish food. They will also graze on aquatic plants if they are available. It is important that the tadpoles not be overfed because the uneaten food will decay, foul the water and reduce the oxygen level. If the water becomes cloudy, it should be changed immediately. Otherwise, it is advisable to pour off about one third of the water each day and then refill the container to its original level with pond water or aged tap water. After one or two weeks the tadpoles can be transferred to more permanent quarters, such as an aquarium, and cared for much as one would goldfish, feeding them what they will consume and changing or adding water as needed.

Depending on the species, tadpoles grow and develop for two to three months before transforming into frogs or toads. During most of this time, the body is spherical with a tail that is two to three times longer than the body diameter. Tadpoles have a sucker-like mouth with rasping teeth and breathe through gills. The change from aquatic herbivores to terrestrial insectivores is a phenomenal event that involves both internal and external changes. The first noticeable change is the appearance of hind legs. This occurs sometime before the actual transformation. Then forelegs appear and the tadpoles switch from gill breathing to lung breathing. At this time the tadpoles (sometimes called “pollywogs” when they have four legs and a tail) must be able to crawl out of the water to prevent drowning. They will not eat for the next few days because their internal organs are continuing to transform. At this time the tails are absorbed and gradually disappear. Following transformation, the juveniles can be housed and maintained in the same manner as adults.

Careful observation of an amphibian’s life cycle and daily record keeping by the students will enhance their understanding and appreciation of this developmental process.