

All About Amphibians

Investigation Data Sheet



Frog Metamorphosis

Frogs look very different as adults than they do when they first start life. After hatching from eggs, frogs live in the water as tadpoles and then gradually develop the ability to live on land. Starting out life in one form and later changing into something else is called metamorphosis. This is a process that almost every amphibian goes through.

Objective

Observe the metamorphosis of a frog as it goes through the egg stage, tadpole stage and adult stage.

Materials

- a medium-sized plastic tank
- water (tap water or pond water)
- a few water plants
- stones
- tadpole growth food
- water conditioner (if you use tap water)
- an air pump
- frog eggs from a local pet store
- crickets or other insects to feed the adult frogs

Safety Notice: All applicable laboratory safety rules must be followed. Students should not perform any experimental activity without the teacher's supervision and express permission. Students must follow safety guidelines and wear appropriate protective gear.

Procedure

1. Set up the tank by placing the stones inside the tank and filling the tank to a water level of about two inches. (Don't forget to add water conditioner if using tap water. Tap water contains chemicals that are okay for humans but bad for frogs.) Place the air pump in the water. Add plants to the tank and a few larger rocks, making sure the rocks reach above the surface of the water. Let the water sit overnight.
2. The next day, place the frog eggs inside the tank. Sketch the frogs at the egg stage of their life cycle and record your observations below.

Date: _____

3. After two to three weeks, you will notice the frogs hatching from the eggs as tadpoles. They have just begun the tadpole stage of their metamorphosis. At first, the tadpoles will have a tail but no arms and no legs. Be patient, it will take some time for the tadpoles to grow into adult frogs. Begin adding food to the water. If your water is from a pond, there's no need to add food right away. The pond water has all the food and nutrients the tadpoles will need to grow. It can take anywhere from 12 to 16 weeks. Check on the tadpoles on a daily basis. Make sure there is enough water in the tank for them to grow. Sketch the tadpoles as they grow and record your observations below. You may want to make additional sketches and observations in a notebook.

Date: _____

4. At about 16 weeks, you'll notice the tadpoles' tails have disappeared and small legs have grown. The tadpoles have reached the third stage of their development — they are now adult frogs. Frogs have different dietary needs than tadpoles. Have some crickets and other small insects available to feed your frogs. Sketch the frogs and record your observations below.

Date: _____

Conclusions

- Because amphibians are cold-blooded and because they need to be near water to keep moist, they have developed special behavior patterns to help them survive. Can you guess what some of these might be?
