A Frogs Life Cycle

PA HERP
Teacher's Zone

Grade Level:
6-8

Subject:
Biology, Natural Science Life Science

Duration:
45 minutes to 1 hour for lesson, 30 minutes for activity, 1+ class periods for presentations

Setting:
Classroom

Vocabulary:
metamorphosis, life cycle

Lesson By:
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Summary:
Students will learn the life cycle of frogs and toads and the many changes they go through from egg to adult and the challenges they face within these cycles of life.

Objective:
- Students will be able to identify the different stages of a frogs' life cycle.
- Students will be able to understand the meaning of metamorphosis.
- Students will understand how habitat and weather play a vital role in the growth of frogs during metamorphosis.

Materials:
- Printable cycle chart.
- Photos of a frog in different stages of metamorphosis.
- Photos of predators.
- Photos of habitats.
- Pen, paper, printer, internet access.

Background:

Frogs and toads begin life in the water. The female frog lays many eggs called a spawn. Typically, eggs are laid in calm waters like ponds, vernal pools, and river and lake backwaters. Eggs of different species may vary in size, shape and color. The eggs are coated with a jelly-like substance that acts as a protective coating. The eggs float near the surface of the water where it's warmer. The eggs usually take around 3-25 days to hatch depending on the species and the water temperature.

After hatching, the frog begins its next stage as a tadpole. The tadpole starts out with a mouth, tail and external gills that it uses to breath. At this point, the tadpole spends its time feeding on algae. After about four weeks, the tadpoles' gills start to disappear, and the mouth starts to develop tiny teeth to aid in grinding down food. Within 6-9 weeks the tadpole starts to develop hind legs and then front legs. The head starts to become more distinct and the body becomes more elongate while the tail reduces in size. The tadpoles start to ingest larger food items like insects and aquatic invertebrates. At around 12 weeks, the tadpole transforms to a froglet; the legs are more developed, the body and head are more defined like a miniature adult frog, and the tail is only a stub. Soon the frog will leave the water and start its life on land; eventually maturing into an adult.

Some factors play an important role in the development of frogs throughout metamorphosis. These include the temperature of the water, the waters acidity and PH levels, and pollution. Water levels may also affect the amount of time the process takes. These factors, along with predators, are the reasons for high mortality rates during this period of a frogs' life cycle.

Preparation:
The materials needed for this lesson can be found through online sources; some maybe found within the compressed file and provided with this lesson.

Procedure:
1.Discuss the process of metamorphosis of frogs and how their life cycle differs from most animals.
2.Relate how habitat and diet are important key elements to a frogs' life cycle.
3.Discuss the problems that frogs may encounter within the different stages of their life cycle. (water conditions, predators, pollution)
4.Review materials. Have students write a story about a frogs' journey through life or

have them write down the stages of a frogs' development and the processes that occur during each stage

Conclusion:

The life cycle of frogs is unique in its own way. Students will be able to share their knowledge and have a better understanding of the complex life of a frog.

Assessments

Standard tests can apply here, but students can also be graded on their creativity and presentation of data about their fictional animal that they create.

Extensions:

Grow a Frog:

Another great learning experience for students is observing a frogs' life cycle in the classroom! We do not recommend warehouse supply stores for this activity. Most warehouses suppliers use wild caught specimens. We ask that you do research on the supplier to determine if their specimens are captive bred. We recommend http://www.growafrog.com/ . As an alternative, you may be able to collect eggs or tadpoles to display in the classroom. (be sure to abide by state laws) Raising eggs/tadpoles in captivity, may greatly reduce the normally high mortality rate of tadpoles. Using eggs also provides an additional tool to teach about egg develment.

Resources:

"Reptiles and Amphibians of Pennsylvania and the Northeast" by Hulse, et. al

Notes: