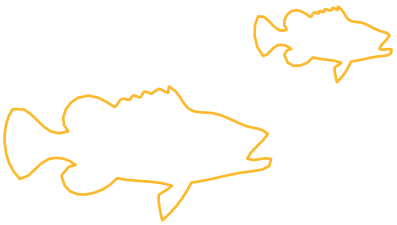
Family Fun

Life Cycle Art

Enduring Understanding: Frogs, like all animals, have a unique life cycle.

Materials

- Paper (construction, computer, watercolor, etc.)
- Various media (crayons, colored pencils, watercolor, tempera paint, etc.)



Setup:

1. Prepare art materials
2. Go to this photo gallery of the frog lifecycle: https://www.timeforkids.com/k1/life-cycles/

Program outline:

What is a life cycle?

- All animals have their own life cycle.
  - Some are similar.
  - Some are different.
  - Talk about the human lifecycle: embryo, to baby, to juvenile, to adult

What does the frog life cycle look like?

- Frogs, like all animals, have a unique life cycle. Their life cycle has some things in common with those of other animals, but it is also different.
- Using the photo gallery link above, look at pictures of the lifecycle.
  - Eggs
    - Laid in freshwater and live inside soft shells while they get ready to hatch
  - Tadpoles
    - Live in freshwater, where they breathe water with gills and swim with tails
  - Froglets
    - Changing from tadpole that lives in water to adult frog that can live on land

program outline continued:

- Adult Frogs
  - Breathe air with lungs and use legs to walk, hop, and swim
- Describe each life cycle stage to whatever depth is appropriate for your students. (For more information on each stage, see the "Instructor Background" section of the lesson.)

Discuss the idea of metamorphosis

- Metamorphosis is when an animal quickly and dramatically changes its body or shape when moving from one life cycle stage to the next.
- Some animals, including many insects, go through metamorphosis.
- Frogs go through metamorphosis.
  - When they are tadpoles, frogs have gills to breathe water, a long tail, and no legs.
  - Adult frogs have lungs to breathe air, no tail, and four legs.
  - Metamorphosis happens when the tadpole grows lungs, loses its gills, shortens its tail, and grows legs.

Create your own artistic representation of the frog life cycle.

- Explain that students will be creating their own frog life cycle art.
  - The art may be creative, but it should include the main characteristics of each life cycle stage.
    - For example, the tadpole should have a long tail and no legs, the froglet should have short legs and a short tail, and the adult frog should have four developed legs and no tail.
    - Have the students do each life cycle stage individually.
    - Once the students have checked the order of the life cycle stages, have the students mount their artwork on a larger piece of paper in the correct order.

Student art show

- Hang up your artwork around the house.

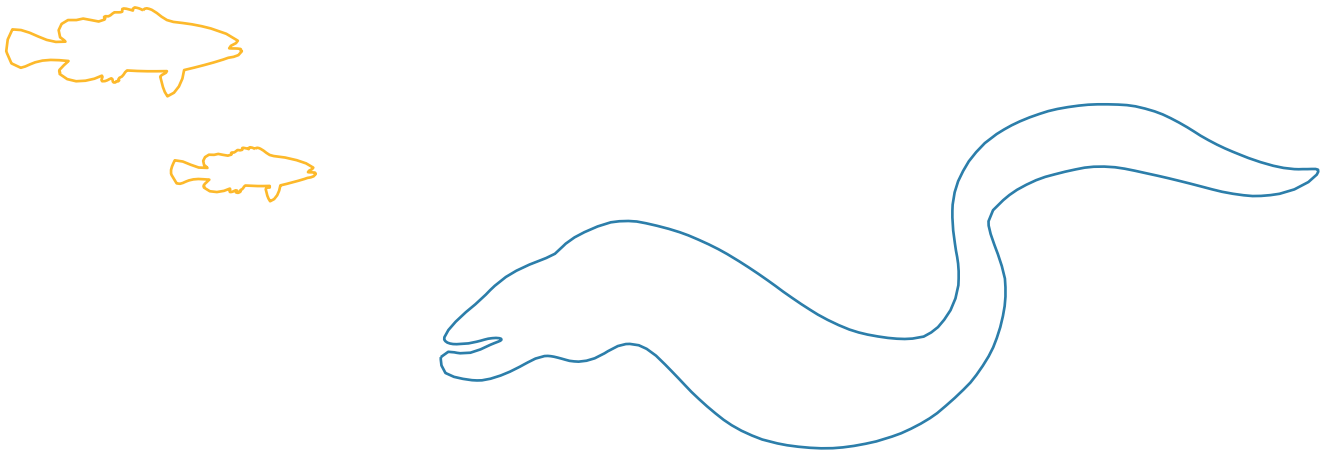
Background information:

Frogs are a large and diverse group of amphibians that live throughout the world, including in the Bay Area and the San Francisco Bay's watershed. Both globally and locally, frogs depend on clean freshwater habitats throughout their life cycle. As eggs, tadpoles, and froglets, frogs live in freshwater. Even as adults they must still have access to freshwater. Frogs are also extremely sensitive to pollution in the water, air, and land.

Frogs start life as eggs, usually laid in ponds, lakes, or slow-moving streams. Frog eggs are made of a soft, gelatinous material that allows water, nutrients, and oxygen to come in. Tadpoles, or larval frogs, emerge from the eggs. Tadpoles are aquatic animals, breathing water with gills and living in freshwater habitats. Most tadpoles are herbivorous, feeding on planktonic algae, such as diatoms, but a few frog species have carnivorous tadpoles.

From the tadpole stage, frogs undergo the process of metamorphosis. During a very short period—only 24 hours in some species—the tadpoles lose their gills and develop lungs with which to breathe air. They also develop legs, lose their tail, and undergo several other changes. The froglets are extremely vulnerable to predation during metamorphosis.

Once metamorphosis is complete, the adult frog is free to move between aquatic and terrestrial environments. However, even adult frogs generally live in or near freshwater habitats because they need to stay moist, need these freshwater habitats to reproduce, and may hunt aquatic animals. Adult frogs play an important role in both freshwater and terrestrial food webs, feeding largely on insects and other invertebrates and serving as a food source for many animals, including herons, raccoons, and snakes.



glossary:

Adult: Final stage of the frog's life cycle

Egg: First stage of the life cycle of many animals, including frogs

Froglet: Third stage of frog life cycle; frog during metamorphosis, partway between tadpole and adult; has gills, short tail, and small, undeveloped legs

Life Cycle: All the stages of an organism's life

Metamorphosis: Process by which an animal quickly and dramatically changes its body or shape when moving from one life cycle stage to the next

Tadpole: Second stage of frog life cycle; frog before beginning metamorphosis; has gills, long tail, and no legs;