



Lesson 2: Ask Me About Amphibians

Theme

Amphibians are indicator species and as such they reveal the health of the ecosystem and reflect the impacts of climate change.

Learning Objectives

In this lesson, students will learn about amphibian adaptations, the effects of climate change on amphibians, and the work the RIDEM Division of Fish and Wildlife is doing to conserve our state's amphibians.

Corresponding Activities for this Lesson

- Fragmentation Frenzy

Materials

- Lesson 2 PowerPoint
- Frog life cycle (metamorphosis) models
- Large paper
- Markers/crayons

Lesson

1. Ask students if anyone has ever found a frog, toad or salamander. Give students the opportunity to share their experiences with amphibians. Prompt discussion with the following questions and fill in with the following points:

- **Where did you find them?** Frogs, toads and salamanders spend part of their lives on land and part in the water. This is one of the characteristics that separates amphibians from other kinds of animals.
- **What did they feel like?** Amphibians have permeable skin. They absorb water, oxygen and nutrients this way. Since frogs and salamanders need to stay moist, they have a mucus coating on their skin to stop them from drying out, this is what makes them feel slimy. Toads lack this covering and can tolerate drier conditions, they feel rough and bumpy.
- **How big were they?** Amphibians go through metamorphosis, they change from egg, to larva (tadpole) to adult. Juveniles of most amphibians look like miniature versions of adults. *Show metamorphosis models.*
- **Was it cold? Warm?** Amphibians are ectothermic, or cold-blooded. Discuss “Amphibians through the Seasons,” found in the Lesson 2 PowerPoint.

2. Ask students what comes to mind when they hear the words “climate change.”

- Collect answers and write down the words students have heard associated with climate change.
- Explain to students the difference between weather vs. climate. For example, think of it as a closet, weather is your outfit for the day, climate is your whole wardrobe for the year.
- Explain that the climate, or weather pattern over the past 30+ years, has been changing at much faster rate than normal. This is causing ice caps to melt, sea level to rise and weather to become more extreme (hotter hot days and stormier storms).

3. Ask students how these things might impact wildlife.

- Discuss impact to amphibians: Amphibians are what scientists call “indicator species.” They are sensitive to changes in the environment due to their unique adaptations (ectothermic, absorb toxins through skin, need water during their life-cycle). By observing how amphibian populations are doing, scientists can determine the health of the habitat. Less frogs or sick frogs means poor/unhealthy habitat; more frogs and healthy frogs means good/clean habitat.

4. Ask students how the RIDEM Division of Fish and Wildlife could help our native amphibians. Have students suggest ideas, then discuss “Operation Spadefoot.” *Details about this conservation project are provided in the notes section of the Lesson 2 PowerPoint.*

5. Ask students how *they* could help amphibians and slow down climate change.

Have students work in groups to create a mural of small ways they can help. Students should use their own ideas for the murals, but here are some examples as well:

- Don’t pollute
- Don’t use pesticides
- Clean up and protect amphibian habitats
- Turn out the lights
- Ride a bike instead of driving
- Conserve water
- Reduce, reuse, recycle

6. Have each group share their mural and explain why it is important to them to protect amphibians and other wildlife. Have each student pick one thing that was discussed today that they would like to share with someone in the future (friends, family, neighbors).