

# **All Toads are Frogs but...Not All Frogs are Toads**

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School or Agency: St. Anne Wetland Education Outreach Project

Grade Level(s): 6-12

Science Topic: amphibian, growth, adaptation

## **Summary**

Discuss why. Differences between the two: Frogs – semi-aquatic, smooth permeable skin... Toads – terrestrial (except when tadpoles), rough bumpy skin, peritoid glands

## **Core Content**

NS.K-4.1: Science as Inquiry

NS.K-4.3: Life Science

## **Objectives**

- 1) Students will be able to understand the life cycles of amphibians
- 2) Students will be able to distinguish a toad from a frog.

## **Materials**

- Pencil
- Paper
- Camera
- Amphibian Field Guide
- Diagrams of metamorphosis stages

## **Procedures**

- 1) Classroom Discussion: Talk about the stages of metamorphosis (reproduction, eggs, tadpoles, froglets, frog/toad) and differences between frogs and toads.

- a. External fertilization: female releases eggs while male hold on to her (amplexus: pose, like a hug from behind) and fertilizes the eggs as they are released.
- b. Eggs are deposited in (frogs) or around (frogs & toads) a water source in a gelatinous substance that keeps them in a cluster or strand.
- c. Inside the eggs the tadpoles begin to form, they do not look anything like a frog or toad at this stage. (Another name for a tadpole is a pollywog.)
- d. Thyroxin, is produced by the thyroid gland and an increase of this hormone “tells” the tadpole it is time to hatch. The increase of the hormone can be naturally induced or brought about by environmental stressors (high temperatures, drought, etc.)
- e. Tadpoles have tails and gills and cannot breath out of water. They can either feed on algae or they can be cannibals if food supply is low. They cannot survive out of water.
- f. The tadpoles then transform into froglets. Froglets have hind legs but no front legs. They also begin to form lungs and the gills begin to disappear. Their tail begins to reabsorb. They can leave the water now but return too.
- g. Eventually the front legs “pop” out, they formed inside the frog before being visible. The lungs are fully formed at this point and the tail has completely absorbed back into the frog/toad.

2) St. Anne’s: (preferably spring)

- a. Have children look for different examples of frogs and toads and record what they find. (be careful so you don’t disturb the habitat)
- b. Record characteristics, where it was found, what it was doing, etc.
- c. Take/draw picture of the amphibian for record book. Be sure to release any captured organisms properly.

**Extensions**

For older groups:

- 1) Identify the species found using a taxonomic key and
- 2) Identify the life cycle stage, draw picture of stage individual was found in if no camera.

- 3) Discuss threatened and/or endangered species and how they can help.

### **Assessment Techniques**

Evaluations (questions)

- 1) Create a Venn diagram to compare frogs and toads.
- 2) List the stage of metamorphosis.
- 3) List differences and similarities between frogs and toads.
- 4) Where are frogs/toads more likely to be found (water or land)
- 5) Why do you think they go through so many stages of metamorphosis?

### **Resources**

All About Frogs. Frogs and Toads. <http://allaboutfrogs.org/weird/general/frogtoad.html>.  
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American Museum of Natural History. <http://www.amnh.org/exhibitions/frogs/repro/>.