



Amphibian Trivia: What's there to know about frogs and why are they important?

Overview: As partners, students will work to understand materials about frogs. Then, partners will be separated to form two groups to play the amphibian trivia game. Students will learn about the importance of amphibians such as frogs as well as how frogs differ from toads.

Subject Areas: Science

Grade Levels: K-5, 6-8, 9-12

Topics: Biology, Ecology, Animals, Water

Great Lakes Literacy Principles:

4. Water makes Earth habitable; fresh water sustains life on land.

Objective:

Students will learn more about the characteristics, life cycle, habitat, and predators of frogs as well as the differences between frogs and toads.

Materials needed:

Amphibian Trivia Game

Attached Precursor to game

Standards (NGSS)

3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. [Clarification Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.]

3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.* [Clarification Statement: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.] [Assessment Boundary: Assessment is limited to a single environmental change. Assessment does not include the greenhouse effect or climate change.]

3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. [Clarification Statement: Changes organisms go through during their life

form a pattern.] [Assessment Boundary: Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.]

MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.* [Clarification Statement: Examples of ecosystem services could include water purification, nutrient recycling, and prevention of soil erosion. Examples of design solution constraints could include scientific, economic, and social considerations.]

MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. [Clarification Statement: Examples of local environmental conditions could include availability of food, light, space, and water. Examples of genetic factors could include large breed cattle and species of grass affecting growth of organisms. Examples of evidence could include drought decreasing plant growth, fertilizer increasing plant growth, different varieties of plant seeds growing at different rates in different conditions, and fish growing larger in large ponds than they do in small ponds.] [Assessment Boundary: Assessment does not include genetic mechanisms, gene regulation, or biochemical processes.]

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Resources:

<http://www.kidzone.ws/lw/frogs/>

<http://www.defenders.org/frogs/basic-facts>

<http://edtech2.boisestate.edu/wickss/502/conceptmap.html>

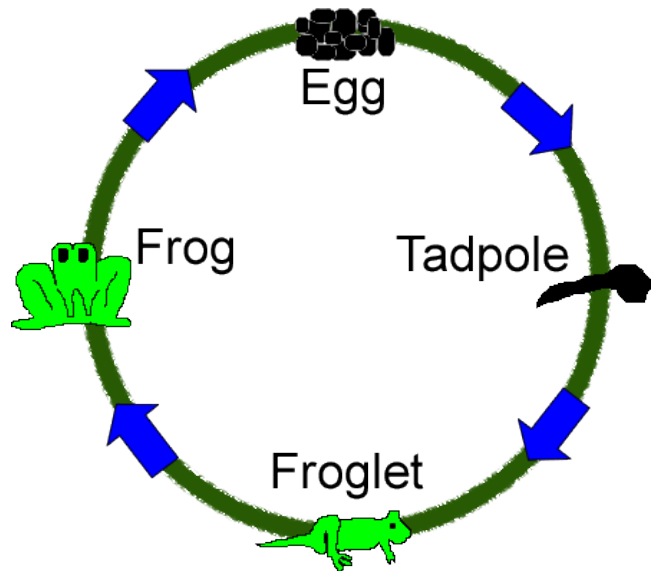
Characteristics:

Frogs are cold blooded, so their bodies are the same temperature as the environment around them. To warm up, they will sit out in the sun. When they want to cool down, they'll jump back into the water. Frogs have big eyes that bulge out so they can see all around them. They also have great hearing because of the eardrums that are located right next to the eyes. Frogs are great at jumping because of their strong legs. They can use these legs to dig underground at the bottom of lakes and ponds to hibernate for the winter. Frogs are also great swimmers because of their webbed feet.



Life Cycle:

Frogs are amphibians. Amphibian means "both lives". This is because they start as tadpoles and grow into frogs. Frogs are born as eggs in water. The eggs hatch into tadpoles. Tadpoles, like fish, have gills to breathe underwater. Tadpoles go through metamorphosis, which is a change that causes the tadpole to grow into a frog. Back legs will grow before front legs and the mouth will get wider. Soon the eyes will grow bigger and their tail will disappear! The tadpole becomes a froglet and will be a froglet until it develops lungs. Once lungs are developed, it is a frog.



Food:

Frogs are carnivores, meaning that they only eat meat. They will only eat live animals and will eat insects like dragonflies, mosquitos, flies, and moths, but will also eat spiders, grasshoppers and worms. Large frogs can eat mice, small frogs, baby turtles and small snakes. Frogs don't drink water because they can absorb it through their skin.



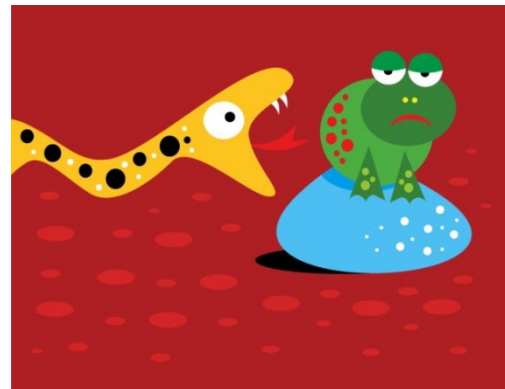
Habitat:

Frogs are found on every continent except Antarctica. Most are found in warmer, tropical areas. Frogs can only live in freshwater. They prefer areas with slow moving water such as lakes, wetlands, ponds and small streams.





Predators:

Many animals, such as fish, reptiles and birds, eat frogs. Some frogs in the rainforest have pads of sticky hair on their feet and bellies so they can climb away from predators. Other frogs use camouflage to hide from predators. A big danger to frogs and other amphibians are humans. Humans cause an increase in water pollution and destruction to frog habitat by building roads and buildings. Water pollution can cause frogs to be deformed, such as growing extra legs and arms. Frogs are special because they can be used as an indicator to understand how healthy a habitat is. Some humans even eat frog legs!



If frogs and toads are both amphibians...what's the difference between them?

Frogs	Toads
 <ul style="list-style-type: none">• Have to live near water• Have smooth, moist skin• Have a narrow or thin body• Eyes seem to bulge out and are round• Have long legs to jump high• Have a lot of predators	 <ul style="list-style-type: none">• Don't have to live near water• Have bumpy, dry skin• Have a wide body• Eyes are lower and football shaped• Have short legs and hop• Don't have many predators because their skin tastes bitter and smells bad