

REPTILES AND AMPHIBIANS

KINDERGARTEN - SECOND

Life Science TEKS

Kindergarten: K.9B, K.10A, K.10B, K.10D

First Grade: 1.9A, 1.10A, 1.10C, 1.10D

Second Grade: 2.9A, 2.9B, 2.10A

Vocabulary

amphibian, backbone, cold blooded, eggs, endothermic, exothermic, eyes, gastrolith, gills, lungs, reptile, skin, tadpole, temperature, thermometer, tongue, vertebrate, warm-blooded

Pre-Show Activity

Pre-Show Lesson: Reptile and Amphibian Differences

Post this question on the board: What is the difference between a reptile and an amphibian?

Materials:

Per class: picture of a frog and a lizard (Appendix A-1), picture of snake vertebrae (Appendix A-3), thermometer

Per group: container with rough piece of material (imitation snake skin), container with Jell-O, container with tapioca pudding in water, container with a couple grapes on sand, copy of various reptile and amphibian pictures (Appendix A-4)

Per student: copy of the Reptile and Amphibian booklet (Appendix A-2)

Procedure:

1. Hold up a picture of a frog and a lizard. The frog picture should be labeled "Amphibian" and the lizard should be labeled "Reptile" (see Appendix A-1). Ask students what they know about these two animals.

2. Give each group two containers, one with a rough piece of material, maybe a piece of imitation snake skin, and a container with some prepared Jell-O. Students will describe how the content of each container feels. Ask students which one they think feels more like reptile skin and which one represents amphibian skin. Students will draw a picture or make a short list of words that describe the skin of each organism on the skin page in the Reptile and Amphibian book.
3. Give each group two containers, one with tapioca pudding in a container of water and one with a few grapes laid on land. Students will describe how the content of each container feels. Ask students, which one do you think feels more like a reptile's eggs and which one represents amphibian eggs? Students will draw a picture or make a short list of words that describe the eggs of each organism on the egg page in the Reptile and Amphibian book. Lead students to understand that all animals need to reproduce or their species will die out. Reptiles and amphibians lay eggs. Amphibians lay their eggs in water because their young start out living in water. They will go through metamorphosis and eventually develop lungs and move onto land. Reptiles lay their eggs on land because their young already have lungs, so they build their homes on land.
4. Show students a picture of a snake skeleton and have them guess what it is (Appendix A-3). Have students feel their own backbone and discuss the fact that all vertebrates, including reptiles and amphibians, have backbones and internal skeletons. Another word for backbone is vertebrae. Students will draw a picture of a backbone for each organism on the backbone page in the Reptile and Amphibian book.
5. Have students look at a thermometer in the room and read it. Discuss what the room temperature is. Tell students to feel their forehead. How does it feel compared to the room temperature: warmer, colder or the same? Ask students what their temperature is right now. Take your temperature and show students what the thermometer says. Ask students what the temperature in the room is. Show them a thermostat or thermometer set to room temperature. Ask students: "How is it possible that my body and your body is a different temperature than this room?" Explain to students that mammals, like us, are warm-blooded. We have a special adaptation which allows us to keep our body at a constant temperature, 98.6 degrees Fahrenheit. Reptiles and amphibians do not have this adaptation. They are called cold-blooded. This means that if they were in this room right now, their temperature would be the same as the room (repeat the temperature of the room). Ask: "If they were in a place where the temperature was 105 degrees Fahrenheit, what would their temperature be? What would your temperature be?" Students will write an explanation of cold-blooded on the cold-blooded page in their booklet. Explain to students that many people prefer to use the words endothermic (warm-blooded) and

exothermic (cold-blooded). The blood of reptiles and amphibians is not actually cold. Being exothermic means they depend on external sources to keep their body warm. This has some advantages. Animals that are endothermic have to eat a lot more because they need fuel for their bodies in order to produce the heat to stay warm. Animals that are exothermic do not have to eat as much. They can go without food for long periods of time. This allows them to live in places that don't have enough food sources to support birds and mammals.

6. Give students various pictures of reptiles and amphibians. Have students classify the pictures as reptile or amphibian (see Appendix A-4). Go over the results with the class. Have students make a list of examples of reptiles and amphibians on the cover of their booklet and/or draw a picture of the animal examples.

Post-Show Enrichment Activities

Activity One: Show Review

Materials: paper plate, craft stick, glue

Procedure:

1. Students will color a paper plate with a happy face on one side and a sad face on the other. Attach a craft stick to the bottom as a handle.
2. The teacher will review facts/non-facts from the show. Students will show the happy face if they agree and the sad face if they disagree.

Possible facts: (Change a word to make it incorrect.)

- A snake is a reptile.
 - Scientists believe that amphibians have been around longer than dinosaurs.
 - A female crocodile protects the nest.
 - A male crocodile will eat his baby crocodile.
 - Some alligators swallow rocks, or gastroliths, to help them smash up the food in their stomach.
 - Blue is a warning color.
 - Alligators are only found in the United States and China.
 - Lizards blink and snakes do not.
 - Lizards can hear and snakes cannot.
 - Turtles can live in land or water.
 - The shell of the turtle is the backbone and ribs.
 - Sea turtles cannot pull any part of their body into their shell.
 - A snake smells with its tongue.
3. Students can draw a picture showing one thing that they learned.

Activity Two: Amphibian's Life Cycle

Materials: tadpoles, *Animal Life Cycles: Growing and Changing (Nature's Changes)* by Bobbie Kalman, paper plate or Venn diagram

Procedure:

1. Find some tadpoles to bring into your classroom. You can often find these in a long standing puddle or a pond. If you cannot find any naturally, there are several educational suppliers online.
2. Students will observe and draw the life cycle changes in their science notebooks.
3. Read a book about the life cycle of a frog and one about the life cycle of a lizard. One suggestion is *Animal Life Cycles: Growing and Changing (Nature's Changes)* by Bobbie Kalman. This book explains both life cycles.
4. Compare the life cycle of a frog to the life cycle of a lizard. Younger students may want to do this by cutting and pasting the stages on a paper plate in a circle so that they can see that it is a cycle (see Appendix A- 5). Older students may want to create a Venn diagram.

Activity Three: Animal Sort

Materials: plastic animals

Procedure:

1. Give students a variety of plastic animals. Students will sort them in different ways. Possible sorts include:
 - Reptiles, amphibians or neither
 - Goes through metamorphosis, does not go through metamorphosis
 - Exothermic or endothermic
 - Fur or no fur
 - Lives on land, lives in water, lives in the air
 - Lays eggs, gives live birth
 - Flies, cannot fly
 - Has a backbone, does not have a backbone
 - Breathes through lungs, breathes through gills
 - Needs food, does not need food (students should see all animals need food)
 - Needs water, does not need water (students should see all animals need water)

Activity Four: Gastroliths

Materials:

Per group: two plastic containers with lids, water, small, smooth rocks, lettuce

Procedure:

1. Review the traits of a reptile and amphibian with the students relating back to the museum show. How are they alike? How are they different? Remind students how in the show they talked about how some reptiles, like alligators, have gastroliths. Gastroliths are small stones that the animal swallows. The stones stay in their stomach and help the animal to grind their food.
2. Students will put the same amount of water in each container, about 30 ml. This represents stomach acid.
3. Students will put the same amount of lettuce leaves in each container; approximately 5 one inch square pieces. These represent the food in the stomach.
4. Put five or six smooth stones in one of the containers. These are the gastroliths.
5. Students will shake the containers the same amount of times.
6. Observe and compare the results of both containers.
7. Students should draw and describe both containers in their science notebooks.

Activity Five: Frog Masks

Materials:

Per student: paper plate, string, 2 egg cups, a party blower, crayons or markers

Procedure:

1. Cut the sides of the paper plate to look like a frog face. To make it easier for younger students, you may want to make patterns for them to trace around. You can find a possible pattern at <http://www.nwf.org/Kids/Big-Backyard/Fun/Crafts-and-Activities/Amphibians-and-Reptiles/Frog-Mask.aspx>.
2. Make the eyes by cutting out two egg cups from a carton. Trim them so that the edges are round and even. Then poke scissors through the bottom of each cup and cut out a circle about $\frac{3}{4}$ inches (2 cm) wide.
3. Cut out the eye area on the mask, and place the eye cups over the eye holes on the mask.
4. Decorate the mask to look like a frog.
5. Use a party blower as a tongue. Put a small hole in the mask where the tongue would go and place the party blower in it.
6. Punch a hole on either side of the mask and tie one piece of string or yarn on each side.
7. When the mask is complete, students will get with a partner. Partner A will put on their mask, partner B will not have their mask on.
8. Partner A will tell partner B everything they know about themselves as a frog (amphibian, lay eggs, vertebrate, exothermic, etc.) Teachers should remind students that they should talk about how they meet their basic needs, like food, shelter, oxygen, protection, and reproduction. Partners will then switch places.

Activity Six: Frog Calls

Materials: frog calls website

1. Students can listen to frog calls at the following link.
<http://www.endangeredspeciesinternational.org/podcasts.html>

Appendix

A-1

Graphic Source: How Stuff Works



Amphibian

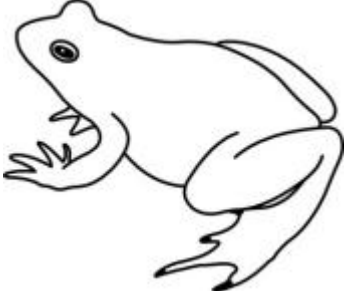

Graphic Source: Wikipedia

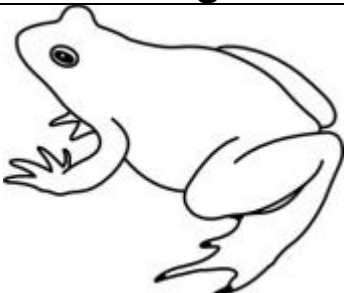



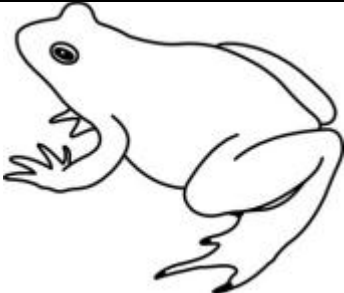

Reptile

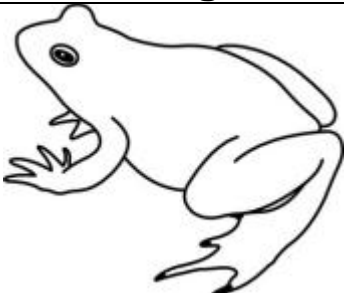

A-2

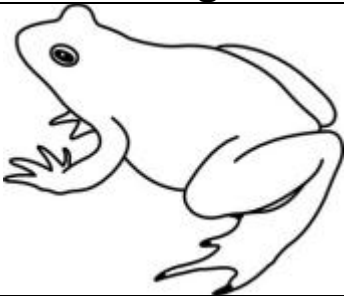

Graphic Source for frog and lizard: classroomclipart.com

Amphibian	Reptile
	
Examples:	Examples:

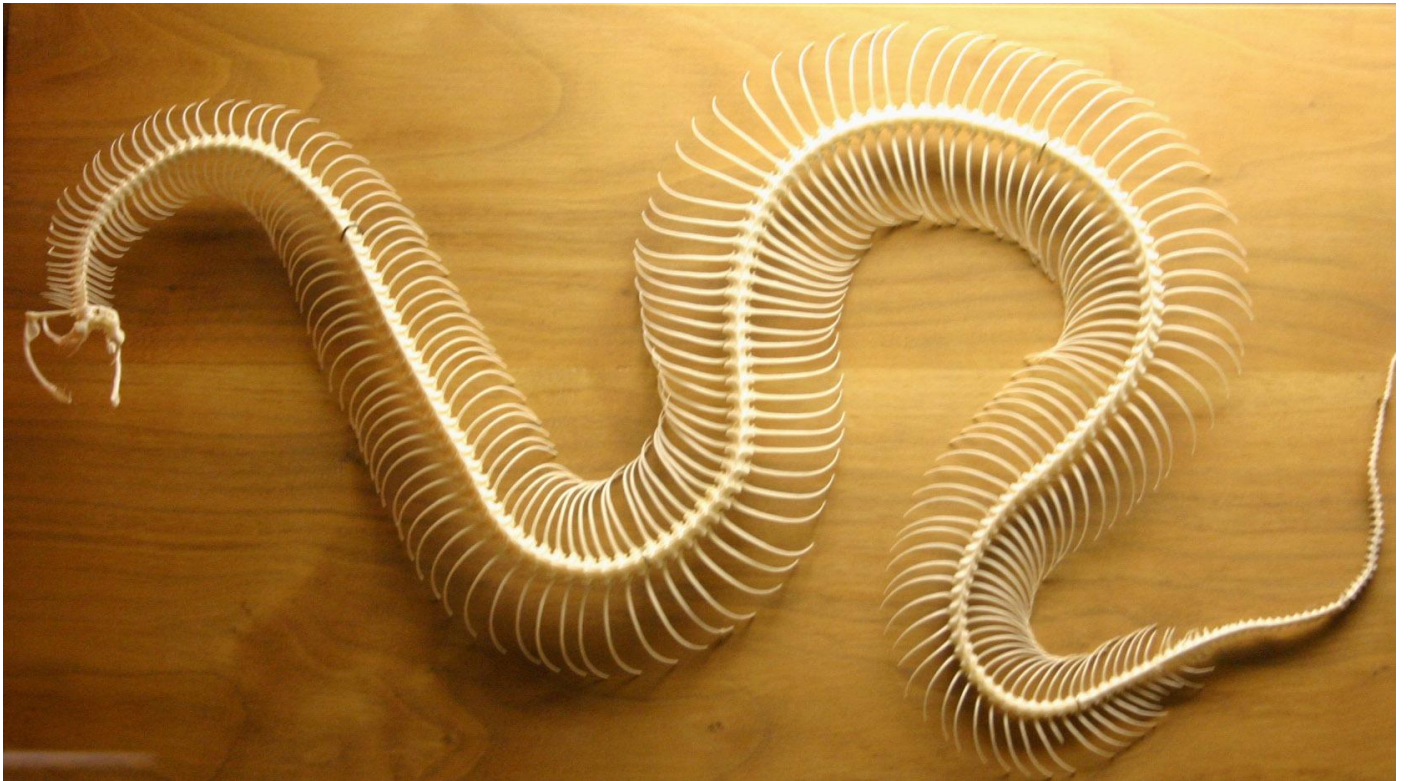
Frog	Lizard
	
Skin	Skin

Frog	Lizard
	
Eggs	Eggs

Frog	Lizard
	
Vertebrate	Vertebrate

Frog	Lizard
	
Cold Blooded	Cold Blooded

A-3



Graphic Source: Wikipedia

Reptile and Amphibian Pictures

The following pictures are all from Wikipedia



Snake



Turtle



Lizard



Crocodile



Salamander






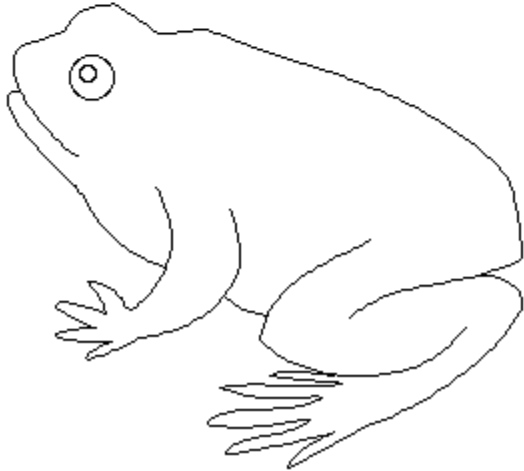
Frog



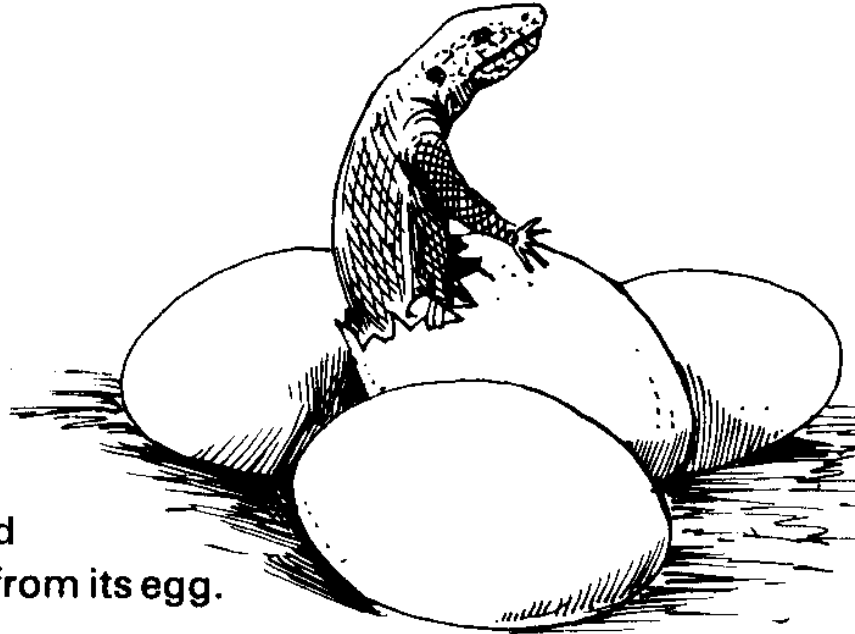
Caecilian

Source:

<http://www.enchantedlearning.com/subjects/amphibians/sequencingfrog/>

<p>Eggs Eggs are laid in masses in or very near the water.</p> 	<p>Froglet The froglet still has remnants of a tail, but now breathes using lungs.</p> 
<p>Tadpole The tadpole swims in the water and breathes using gills.</p> 	<p>Adult Frog</p> 

©EnchantedLearning.com



**Lizard
hatching from its egg.**

