Reptile & Amphibian Lesson Plan – Elementary

Slithery, Slimy, Scaly, and Spectacular!

Recommended Grade Level: 4th -6th grades
Duration: 2-3 class periods

Scientific Background

Many beneficial species, such as snakes, turtles, and frogs, are decreasing in number. This is mainly due to human misunderstanding, pesticide use, and the loss of habitat. This lesson plan aims to increase the student's understanding of nature through hands-on experiences, utilizing trunk contents, and scientific classroom research.

Objectives

- Students in Missouri schools will acquire the knowledge and skills to gather, analyze, observe, record, and apply research information and ideas.
- Students will use tools of observation and science inquiry to identify common Missouri reptiles and amphibians.
- Students will research a specific reptile and/or amphibian and its habitat.
- Students will have knowledge of why certain reptiles and amphibians live in specific areas.
- Students will apply factual interpretation for their assigned reptiles and/or amphibians by way of a diorama and oral presentation.
- Students will be able to spell and define vocabulary words.

This lesson meets the criteria for over 10 Grade-and Course-Level Expectations for Science Education for grades 4-6.

Materials

- Research materials about reptiles and amphibians (trunk content)
- Identification guides (trunk content)
- Acrylic viewers (trunk content)
- Paper and pencil
- Shoebox or other container
- Modeling clay
- Glue
- Plastic, rubber, or craft made reptiles/amphibians
- Craft supplies (paint, markers, crayons, cardboard, felt, foam board, pipe cleaners, etc.)

Lesson Preparation

- Organize students into groups or instruct students to work on an individual basis.
- Make copies of the activity and identification guides as needed.
- Go over basic Missouri species and habitat information.
- Give students time to familiarize themselves with trunk content of instructor's choosing.

- Utilizing trunk contents such as acrylic blocks and laminated cards, share examples of reptiles and amphibians. If possible, locate a nearby naturalist or wildlife rehabilitator who can assist you with any live animal programs you may wish to include (not required).
- Present students with the lesson vocabulary words and definitions listed at the end of the plan.

Challenge One:

a. Have groups make a column diagram of the following animals: snakes, lizards, turtles, salamanders, toads, and frogs.
b. Give students pictures of these local Missouri animals.
c. Students will place the animal in the appropriate column of the diagram.
d. Students will then answer the following questions:
   - Can the animals be aquatic, semi-aquatic, or terrestrial?
   - What type of foods do the listed animals eat? Are they herbivore, omnivore, or carnivore?
   - Do any of the animals listed provide food for other animals? What types of other animals eat reptiles and amphibians?

Analysis:

- Once the challenge is completed, the groups will compile their observation data together as a class.
- How do the animals differ? How are they similar?
- Do the students think the animals listed would be considered beneficial to the ecosystem? Ask them to explain their answer.

Challenge Two:

a. Utilizing the frog life cycle acrylic block located in the trunk, instructor to go over the life cycle and metamorphosis with students.
b. Have students draw the frog life cycle and label each stage.
c. Have students answer the following questions:
   - What visible changes are noted with each stage?
   - How is the life cycle of a frog similar to other species, such as insects or humans?
   - How is it different?

Analysis:

- The students will utilize the frog life cycle and draw conclusions from it.
- How do they think loss of habitat has impacted the frog population in Missouri?
- Write an essay about different types of frogs from our region.

Challenge Three:

a. The student chooses a Missouri reptile or amphibian for a case study (alternatively, the instructor may assign an animal to each student. Additionally, if class size is small and time allows, students can be assigned both a reptile and an amphibian).
b. Utilizing the information learned in **Challenge One**, students will create a diorama depicting the reptile or amphibian, its typical habitat, and food sources from materials listed above. Examples for building a diorama can be found at www.wikihow.com/Make-a-Diorama. The diorama should be labeled with the name of the featured animal and the student's name.
c. Students present their diorama to the class. They explain facts they have learned about that particular animal; its habitat, behavior, shelter, what it eats, and why its numbers may be declining.

Analysis:

- Do students think there are ways we can encourage reptiles and amphibians to live in our urban outdoor areas? (Growing native plants, providing a water source, refraining from pesticide use, offering specific shelters.) Are there ways we can discourage others from ecosystem damaging behaviors? (Encouraging education, natural spaces, discussions)

Lesson Plan Assessment:

- Do the students feel comfortable working in nature?
- Did the students enjoy studying these animals?
- Are students able to identify the groups discussed in this lesson?
- Were the students engaged during the three challenges?
- Can students utilize the vocabulary?

VOCABULARY:

Amphibian – An amphibious organism. Any class of Amphibia of cold blooded frogs, toads, or salamanders.
Aquatic – Lives in the water.
Autotomy – The voluntary shedding of the body parts of animals, usually in defense. Autotomy of the tail is common in many lizards.
Carapace – A body or hard shell that covers part or all of an animal. Turtles, crabs, and boxfish are good examples.
Carnivore – Animals who hunt and eat other animals; meat eater.
Cloaca – A chamber that opens through the anus that is for both excretion and reproduction.
Gravid - A female bearing eggs or embryos.
Herpetology – Scientific study of reptiles and amphibians.
Herptile/herp/herpetofauna – Reptiles and amphibians together.
Herbivore – Plant eater, vegetarian.
Insectivore – Insect eater, subsists on insects.
Metamorphosis – Developmental chance in the form or structure of an animal (such as a frog or butterfly) occurring after birth or hatching.
Neurotoxin – A poison that affects the nervous system.
Omnivore – Animals who eat both meat and vegetables.
Oviparous – An animal who lays eggs outside of its body, and then later the eggs hatch.
Ovoviviparous – An animal who holds the eggs inside its body until they hatch and the living young are delivered.
Plastron – The lower shell of a turtle.
Prehensile tail – Capable of using the tail to grasp or wrap around things.
Reptile – A reptilian organism. Any of a class Reptilia, cold blooded, air-breaking, usually egg laying animals such as alligators, crocodiles, lizards, snakes, turtles, and some dinosaurs – that have a body typically covered with scales or bony plates.
Scute – A bony external plate or scale, as on the shell of a turtle or the underside of a snake. Also called *scutum*.
Semi-aquatic – Able to live on both land and water; some turtles and frogs.
Tadpole **–** A larval amphibian.
Terrapin – Fresh-water tortoise.
Terrarium – The cage or container for keeping reptiles and amphibians.
Terrestrial – Lives on the land.
Viquarium – An enclosure or container for keeping reptiles and amphibians.