

# Scales, Scutes, and Skins

## Program Purpose

The purpose of this program is to learn about adaptations of reptiles and amphibians while dispelling common fears about them through hands-on experiences with live animals.

## Program Length

1½ hours

## Ages

Grades 1<sup>st</sup> - 12<sup>th</sup>

## Maximum Number of Participants

20

## Objectives

After completion of this activity students should be able to:

- Explain the difference between reptiles and amphibians
- Identify at least 3 adaptations of reptiles and 3 adaptations of amphibians
- Demonstrate proper herp handling techniques

## Preparation

Before the class arrives:

- Lay objects for “A herp never forgets” game on a table and cover them with a blanket.
- Put animals you will be using for the program into easily accessible containers (pillow case, clear plastic bucket with lid, etc.)

**\*Note: Do not leave animals unattended.** Either keep them locked in animal room or stay with them.

## Basic Outline

- I. Introduction (10 min)
- II. A herp never forgets game/discuss adaptations (30 min)
- III. Bring out Reptiles and Amphibians (40 min)
- IV. Tour animal room (if time)
- V. Conclusion (5 min)

## Materials

- 1 Dry Erase Board and Marker
  - 1 Spray bottle of water
  - 1 Blanket
  - 1 Photo of snake on tree
  - 1 Rubber snake
  - 1 Rubber snake in pillowcase
  - 1 Snake skin (yellow)
  - 1 Snake shed (clear)
  - 1 Pair of sunglasses with lenses covered with waxed or tissue paper
- Cartoons:
- Snake eating mouse
  - Snake movements (3)
  - Snake organs
  - Snake tongue and Jacobson’s organ
- Various turtle shells
- 1 Wooden snake jaw
  - 1 Sponge
  - 1 Slinky
  - 1 Flipper
  - 1 Pair Goggles

## Introduction

Introduce yourself to the class and tell them that they are going to be learning about herps today. Explain to your class that herpetology is the study of reptiles and amphibians. The word comes from the Greek word “Herpeton” which means crawling things. Define reptiles and amphibians for the class.

**Reptiles:** a group of animals evolved from amphibians. Most have claws on their feet and dry skin covered in scales. Reptiles lay shelled eggs on land and newly hatched reptiles look like a miniature version of the adults.

**Amphibians:** have clawless feet and moist skin. When they lay eggs they are shell-less and often laid in the water. Amphibian means “double life” referring to the fact that most amphibians go through metamorphosis before becoming adults. Ask the students to name as many reptiles and amphibians that live in Wisconsin as they can.

**Reptiles:** turtles, snakes, and lizards.

**Amphibians:** frogs and toads (grouped together by scientists), and salamanders. Newts and mud puppies fall into the category of salamanders.

Make sure to say if each one is a reptile or amphibian so the students can begin to compare and contrast them.

Next explain why the class is called “scales, scutes, and skins.” A **scale** is a plate-like unit on the skin of reptiles that helps protect them. A **scute** is any plate on a reptile including the belly plates on a snake and the plates that form a turtle’s shell. The reason **skin** is in the title of this class is because of the special adaptations of amphibian skin we will be discussing later in the class.

### **A Herp Never Forgets**

After you have finished the introduction, explain that you will be playing a game that will help you learn about some adaptations of reptiles and amphibians. Explain that an **adaptation** is something an animal has or does to help it survive in its environment. Have the class split up into two teams. Instruct the students to choose a team name that has something to do with reptiles or amphibians. Give them about 30 seconds to choose a name. Next explain the rules of the game:

- Each team will be given 20 seconds to come to the front of the room and look at the items under the blanket. Students should try to remember as many of the items as possible and think of ways they might be related to herps.
- While one team is looking under the blanket, all members of the other team must face the back of the room.
- After each team has had an opportunity to look at the items, you will begin calling on one team at a time to tell you what they can remember from under the blanket. You can keep score in several ways. For younger students you can give a point for remembering an item that was under the blanket and just have them guess how it is related. For older students, you may wish to give a point only if they can come up with some way that it is related. See **Appendix A** for a list of items and what adaptations they may represent.

After explaining all of the rules, play the game discussing each adaptation as you go. For high school students you may want to skip the game and simply discuss adaptations using the materials from the game.

### **Live Reptile and Amphibians**

When you have finished playing “a herp never forgets,” explain to the students that next they will have an opportunity to meet some live reptiles and amphibians. Have the students sit either in a circle or rows with space for you to walk between (whichever you are most comfortable with). Make sure to tell the students that they need to follow directions during this part so that they do not scare any of the animals. You do not want to put yourself, the students, or any of the animals in danger.

As you bring out each animal, explain to the students the proper way of handling it:

- Students should wash their hands between groups of animals (turtles, snakes, frogs, salamanders) in order to prevent the spreading of disease. Also this will prevent the animals from thinking the student is food since many of our animals would eat each other in the wild.
- Before allowing the students to touch the amphibians, spray their hands with water. Explain that amphibians have very delicate skin. It is not covered with scales, fur, or feathers like most other animals. Many amphibians can breathe through their skin and the oils on our hands will clog their pores. Wetting our hands before we touch them will prevent this from happening.
- Snakes should only be pet in the directions the scales are lying, from head to toe, never against the scales.
- Students should not pet the snakes on or near the head, and they should not stare the snake in the eyes (human noses make good targets).
- When handling the turtles, students again should not touch near the head.
- **DO NOT** let the students hold or touch the snapping turtle.
- If students feel uneasy about handling the animals, reassure them and allow them to watch their classmates, but don't force them to handle the animals.

While the students are handling the animals, have them discuss the specific adaptations the herps have (see Appendix B). This is also a good time to answer any questions they have.

### **Tour Animal Room**

Sometimes there will be time left at the end of class depending on how many questions the students ask. During this time, if there is another adult present, have them supervise

the other students while you tour the animal room with about 3 kids at a time. Make sure students do not touch things in the animal room. While students are touring the animal room the others can inspect the “herp never forgets” items again, or begin washing their hands.

### **Conclusion**

Answer any last questions that the students have and ask some review questions:

- What are some differences between reptiles and amphibians? (Reptiles: claws on feet, external scales, lay shelled eggs. Amphibians: no claws on feet, moist skin, shell-less eggs, go through metamorphosis.)
- How do hognose snakes defend themselves? (Through their defensive display involving coiling up, hissing, urinating on themselves, and playing dead.)
- Why do we need to moisten our hands before touching amphibians? (To avoid clogging their pores with the oils from our hands).
- Can toads give you warts? (No, this is just an old superstition; however they do contain poison in their skin, so kissing them is not recommended.)
- What are scutes and what are they used for? (Any plate on a reptile. The belly plates on snakes aid in movement and the shell plates on turtles help in protection).

Make sure all of the materials from “a herp never forgets” are returned if they were passed around. Give the students time to wash their hands.

## **References**

Harding, J. H. (1997). Amphibians and reptiles of the great lakes region. Ann Arbor: University of Michigan Press.

National Wildlife Federation.(1997). Let's hear it for herps. McGraw-Hill: Learning Triangle Press.