Teacher Guide: Name the Snake

Concepts:

• Snakes have a number of physical and behavioral adaptations that help them to survive.
• There are many species of snakes in Texas with unique traits.

Learning Objectives:

TEKS: Grades 5 – 7
112.16. 9A,10A; 112.18 12C; 112.19 11A, 12A
Location: Hall of Texas Wildlife (3rd Floor) and Hall of Biodiversity (4th Floor)

Time: 30 minutes

Supplies:

Worksheet
Pencil
Clipboard

Vocabulary:

Scientific name, taxonomy, binomial, genus, species, adaptation, venom, toxin, cryptic, camouflage, infrared, mimicry, vertebrae

Pre-Visit:

- Review vocabulary that students will use in the worksheet
- Review basic snake anatomy

Post-Visit Classroom Activities:

- Have students review what they learned by sharing their favorite snake from the museum and why they chose that particular snake species..
- Assign students a research project on a snake species from Texas. Information should include scientific name, range, habitat, diet, behavior, and conservation issues.

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List of Snake Species on Exhibit at TMM:

Bull Snake
Copperhead
Coral Snake
Western Diamondback Rattlesnake
Western Indigo Snake
Timber or Canebrake Rattlesnake
Rock Rattlesnake
Cottonmouth (Water Moccasin)
Prairie Rattlesnake
Gray-banded Kingsnake
Rat Snake

Note: The snakes on the 3rd floor are accurately painted models, not actual specimens. The snakes on the 4th floor are preserved dry skeletons or wet specimens stored in alcohol.

Name the Snake: What's in a Name?

Common Name
Common names are used to quickly name organisms in everyday language. Common names often describe where the animal lives, its diet, color, or other distinguishing features.

Scientific Name
Common names may become confusing, especially when you consider names in multiple languages, so scientists create a **scientific name**. The study of organizing and naming groups of animals is called **taxonomy**. Scientists assign a two part species name, called a **binomial**, to organisms. The first word is the **genus** and the second word is the **species**.

Find each of the snakes listed below in the Hall of Texas Wildlife (3rd floor). Match the common name to the correct scientific name:

Timber or Canebrake Rattlesnake	*Crotalus lepidus*
Rock Rattlesnake	*Crotalus horridus*
Cottonmouth (Water Moccasin)	*Lampropeltis alterna*
Prairie Rattlesnake	*Agkistrodon piscivorus*
Gray-banded Kingsnake	*Crotalus viridis*

Fun Fact: Crotalus comes from krotalon, a Greek word for rattle!

Name the Snake: Adaptations

Venom
A venomous snake is able to inject **toxins** into the bloodstream of its prey. Venom is injected by fangs. Venom type and fang length are different in many snake species.

Non-venomous
Most snakes in the world are non-venomous. Non-venomous snakes usually eat their prey alive or suffocate them by constriction (squeezing).

Find these snakes in the Hall of Texas Wildlife. Are they Venomous or Non-venomous? Circle the correct answer.

Western Indigo Snake	Venomous	Non-venomous
Copperhead	Venomous	Non-venomous
Bull Snake	Venomous	Non-venomous
Diamondback Rattlesnake	Venomous	Non-venomous

Senses

Smell:
A snake uses its tongue to smell. The Jacobson's organ located on the roof of the mouth helps snakes understand the smells.

Hearing:
A snake picks up vibrations from the ground. This allows it to determine the size of its prey or predators. The snake will then decide to flee, hide, or defend itself.

Sight:
Many snakes have adapted their vision to block UV light if they are daytime hunters. Nocturnal hunters have lenses that allow UV light to enter the eyes. Pit vipers, such as rattlesnakes, see **infrared** (wavelengths from warm objects) not with their eyes, but with pit organs between their eyes and nostrils.

Name the Snake: Adaptations

Protection

If a snake feels threatened, it will flee or warn animals it is nearby. Biting is the last thing a snake wants to do. Some snakes have rattles on their tails that can be heard from a distance. Many snakes hide in their environment by using **cryptic coloration** (**camouflage**).

<u>Find all the snakes that have rattles</u> (Hint: There are 4). <u>Circle the letter next to the snake that you think has the most effective camouflage.</u>

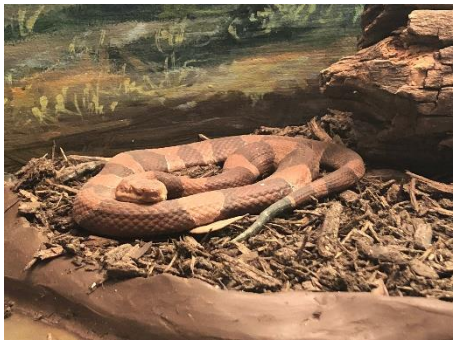
A)

B)

C)

D)

E)



F)

Name the Snake: Adaptations

Mimicry

Mimicry is when one species copies traits of another species. Mimicry helps harmless species trick predators. It can keep them from being eaten, or it can help them obtain food. Color patterns, sounds, smells, and actions are often mimicked.

Look at the photos of the snakes below. How can you tell them apart? Do you know a rhyme to help you figure out which Texas snake is venomous? (If you do not, find the Coral Snake in the Hall of Texas Wildlife to learn one).

Rhyme: _____

Identify the snakes pictured below: One is a Milk Snake and the other a Coral Snake. Which snake is the mimic?

(Image: Wikipedia)

Name:_____ **Name:**_____

Name the Snake: Adaptations

Anatomy
Find the snake skeletons on exhibit in the Hall of Biodiversity (4th Floor)

Bones:
A snake has a long body without legs. It has multiple **vertebrae** (bones of the back) that aid in fast movement and flexibility. A snake's skull has many moveable bones, including loosely attached left and right lower jaws. These features as well as elastic skin around the mouth help a snake swallow large prey.

Teeth:
Snakes have small backward slanting teeth to help swallow their prey. Venomous snakes have a pair of significantly longer teeth called fangs. Fangs can be hollow or grooved.

Look carefully at the rat snake and rattlesnake skeletons on display. Identify at least two similarities and two differences between the species and write them in the correct spaces in the Venn diagram below: