



# Mystery Fossil

## Introduction

Scientists study modern animals for clues about the behavior of ancient dinosaurs. Because non-avian dinosaurs have been extinct for at least 66 million years, understanding behavior and movement poses a real challenge. Scientists observe movement and morphological features in living species, from sheep to crocodiles to lions, to flesh out what we know about ancient animals such as extinct dinosaurs. In this activity, students will examine a mystery fossil and compare it with body parts of living animals. They will use evidence and their imaginations to hypothesize about what the fossil is and how it was used.

## Objective

Through investigation, students will learn that animals have body parts that they use for specific functions.

## Time Frame

One class period (40 minutes)

## Materials Included

- Museum Display: Mystery Fossil spike cast, stand, and label
- African porcupine quill
- Goat horn
- Hippopotamus tooth
- Harpy eagle talon
- Giant anteater claw
- Whale tooth
- Grizzly bear tooth
- Alligator tooth
- Steenbok horn
- Alternate Mystery Fossils

## Online Materials to Print

Worksheets (Grades K-2/Grades 3-5)

## Online Resources

- Modern Animal Slideshow
- [11 Questions About Stegosaurus](#) (7-minute video)

## Teacher to Provide

Colored pencils, markers, or crayons

## Classroom Setup

Arrange tables into up to six stations, each with one or two of the objects (African porcupine quill, goat horn, hippopotamus tooth, harpy eagle talon, giant anteater claw, whale tooth)

**Note:** The box includes two alternate mystery fossils (with labels) to use if students already know what the mystery fossil is from the other classes.

## Procedure

1. Pass around the mystery fossil, or invite students in small groups to come up to the Museum Display to observe and touch it. Ask them to closely observe its size, shape, and texture. Ask students what they think the fossil is. Write answers on the board. (5 minutes)
2. Tell students that at each table is one or two objects which is an animal body part. Have them examine their objects and discuss them: *What is this body part? What kind of animal did it come from? What did the animal use it for?* Have them fill out their worksheets. (15 minutes)
3. Have one student from each table share their objects with the class and what they think the object is. (5 minutes)
4. Show students the slideshow, which reveals what kind of animal each object belonged to. (5 minutes)  
*(Answers: African porcupine quill used for protection, hippopotamus tooth used for fighting, goat horn used for protection, harpy eagle talon used for gripping, whale tooth used for capturing prey, giant anteater claw used for getting food., Grizzly bear tooth for eating, Alligator tooth for eating, Steenbok horn for defense and fighting.)*

## Wrap up

Draw students' attention back to the Mystery Fossil. Ask if they have any new ideas about what the fossil is and what

it was used for after they have investigated other animal body parts. Write their answers on the board. (5 minutes).

To reveal the Mystery Fossil, have students [watch this video](#). (You can skip ahead to 2:54 if you're short on time.) Alternatively, you can tell students that the mystery fossil is the tail spike of a Stegosaurus!

## Standards

### NYS P-12 Science Learning Standards

**K-LS1-1.** Use observations to describe patterns of what plants and animals (including humans) need to survive.

**3-LS4-1:** Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.

### NYS Next Generation ELA Learning Standards

#### **K-2: SL1/SL2 (Comprehension and Collaboration):**

Participate in collaborative conversations with diverse peers and adults in small and large groups and during play. Develop and answer questions, and describe key ideas or details of diverse texts and formats.

**K-2: KL4/KL5 (Vocabulary Acquisition and Use):** Explore and use new vocabulary and multiple-meaning words and phrases in authentic experiences. Use words to identify and describe the world, making connections between words and their use.

#### **K-2: 1SL4/1SL5 (Presentation of Knowledge and Ideas):**

Describe familiar people, places, things, and events with relevant details expressing ideas clearly. Create or utilize existing visual displays to support descriptions to clarify ideas, thoughts, and feelings.

**3-5: SL1 (Comprehension and Collaboration):** Participate and engage effectively in a range of collaborative discussions with diverse peers and adults, expressing ideas clearly and persuasively, and building on those of others.

#### **3-5: 1SL4/1SL5 (Presentation of Knowledge and Ideas):**

Describe familiar people, places, things, and events with relevant details expressing ideas clearly. Create or utilize existing visual displays to support descriptions to clarify ideas, thoughts, and feelings.

**3-5: 4L6/5L6 (Vocabulary Acquisition and Use):** Acquire and accurately use general academic and content-specific words and phrases, including those that signal precise actions, emotions, or states of being and that are basic to a particular topic.

**3-5: W2 (Text Type and Purposes):** Write informative/explanatory texts to explore a topic and convey ideas and information relevant to the subject. Use precise language and content-specific vocabulary to explain a topic.








# Mystery Fossil

Name: \_\_\_\_\_

Draw the object

Is the object:

-  Smooth
-  Bumpy
-  Straight
-  Curved
-  Has lines
- ??? Other \_\_\_\_\_

What is it?

- Horn
- Tooth
- Claw
- Spike
- Other \_\_\_\_\_

What is it used for?

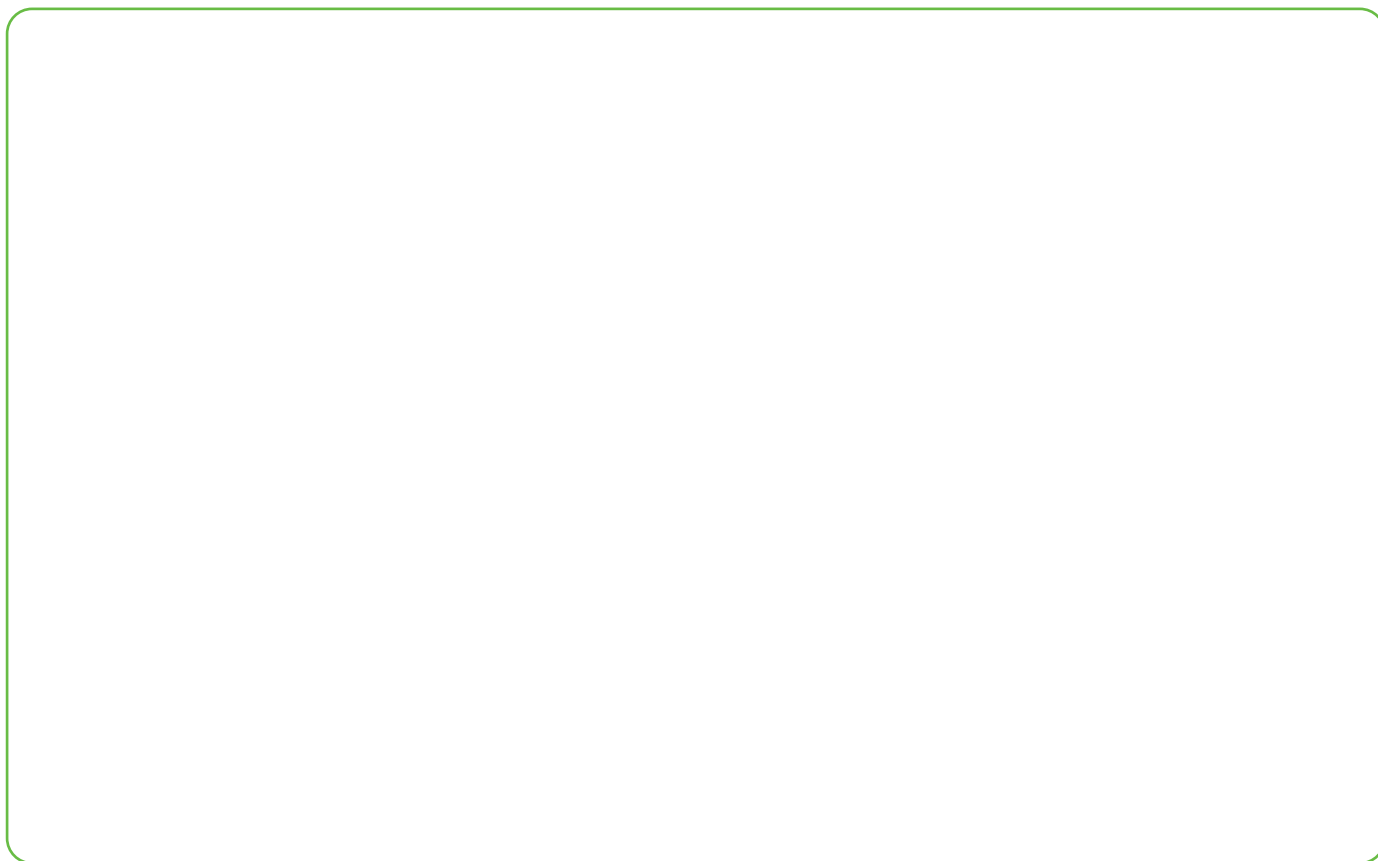
- Protection
- Attraction
- Fighting
- Eating
- Other \_\_\_\_\_

# Mystery Fossil

**Name:**

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Investigate the object on your table. Draw the object and answer the following questions.



1. Describe the object. (Is it smooth, bumpy, curved, straight, has grooves...?)

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2. What is it? (horn, tooth, claw, spike)

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3. What is it used for? (Eating, protection, attraction, fighting, gripping)

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