

# What Dinosaur Did These Bones Come From?

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## Research Assistant Notebook

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Student Name

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Teacher Name

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Class Period

## SECTION 1

### What types of bones are these Mystery Fossils?

- 1 With your partner, make detailed observations of **Mystery Fossil #1** using the 3D fossil viewer on **Step 2** of the investigation. Record your observations below.  
(Hint: Be as detailed as possible- you will need to reference these notes later on in the investigation.)

**Discuss with your partner:** What body part do you think Mystery Fossil #1 is? Why do you think this?

- 2 With your partner, make detailed observations of **Mystery Fossil #2** using the 3D fossil viewer on **Step 4** of the investigation. Record your observations below. (Hint: Be as detailed as possible- you will need to reference these notes later on in the investigation.)

- 3 List some of the types of bones you can rule out based on your observations.  
(Hint: This is your disconfirming evidence.)

- 4 Based on your observations, what type of bone do you think Mystery Fossil #2 is? \_\_\_\_\_

**Discuss with your partner:**

- What evidence do you have to support your explanation for what type of bone Mystery Fossil #2 is?
- What is your strong evidence?
- What is your weak evidence?

(Hint: Strong evidence supports only one explanation. Weak evidence supports more than one explanation.)

**SECTION 1 (continued)**  
**What types of bones are these Mystery Fossils?**

- 5 With your partner, make detailed observations of **Mystery Fossil #3** using the 3D fossil viewer on **Step 5** of the investigation. Record your observations below. (*Hint: Be as detailed as possible- you will need to reference these notes later on in the investigation.*)
  
  
  
  
  
  
  
  
  
  
- 6 List some of the body parts you can rule out based on your observations. (*Hint: This is your disconfirming evidence.*)
  
  
  
  
  
  
  
  
  
  
- 7 Based on your observations, what body part do you think Mystery Fossil #3 is? \_\_\_\_\_

**Discuss with your partner:**

- What evidence do you have to support your explanation for what type of bone Mystery Fossil #3 is?
- What is your strong evidence?
- What is your weak evidence?

(*Hint: Strong evidence supports only one explanation. Weak evidence supports more than one explanation.*)

SECTION 2

What type of dinosaur did these bones come from?

STEP 9

Here's a helpful hint to read before starting this activity.

What do we mean by "type" of dinosaur? In this investigation, we are using the word "type" as a way to identify which general group of dinosaurs the Mystery Fossils belong to. This will help narrow down our search from the thousands of dinosaur species that have been discovered to just the species that belong to a distinct branch of the dinosaur family tree. The three "types" of dinosaurs we are going to be working with in this investigation are Ornithischian, Sauropod, and Theropod.

1 **Start here.** In the column below, list the key features of Mystery Fossil #1.  
*(Hint: A "key feature" is something distinctive that you noticed in your previous observations of the Mystery Fossils.)*

2 **Next,** on the website, click on a type of dinosaur to compare and contrast with the Mystery Fossil.

3 **Finally,** look for the key features that you identified in the Mystery Fossil-- are they also present in fossils from each type of dinosaur? If yes, place a check mark in the box below the listed types of dinosaur. If no, place an X in the box.



Key features of  
**MYSTERY FOSSIL #1**



	ORNITHISCHIAN	SAUROPOD	THEROPOD
1. It is sharply pointed on one end.			
2.			
3.			
4.			
5.			

**Repeat** the process with Mystery Fossil #2 on the next page.

SECTION 2 (continued)  
What type of dinosaur did these bones come from?

STEP 10

- 1 Key features of  
MYSTERY FOSSIL #2 

	ORNITHISCHIAN	SAUROPOD	THEROPOD
1. <i>It has one knob on one end and two smaller knobs on the other end.</i>			
2.			
3.			
4.			
5.			

- 2 **Next**, analyze the data in the charts for Mystery Fossil #1 & 2 and discuss with your partner: *Which TYPE of dinosaur does your evidence point toward? (Circle one)*

Ornithischian

Sauropod

Theropod

- 3 **Now**, discuss with your partner what strong evidence you have from your comparisons of Mystery Fossils #1 and #2 to support your idea for the TYPE of dinosaur these bones come from. Discuss what disconfirming evidence you found that helped you rule out the other two types.

SECTION 3  
What species of dinosaur did these bones come from?

STEP 11

Here's another helpful hint to read before completing this step.

How is "species" different from "type"? "Type" is a broad term; in this investigation, when we refer to type, we are referring to either Ornithischian, Sauropod, or Theropod dinosaurs. Species is a very specific term; there are hundreds of species belonging to each type of dinosaur. For example, Tyrannosaurus rex and Velociraptor mongoliensis are both Theropods, but they are different species of Theropod.

1 **First**, in the column below, list the key features of Mystery Fossil #3.  
*(Hint: A "key feature" is something distinctive that you noticed in your previous observations of the Mystery Fossils.)*

2 **Next**, on the website, click on a type of dinosaur you think the Mystery Fossils belong to.



3 **Then**, write down the species names on the dotted lines below.  
*(Hint: Species names are the italicized part of the label)*

4 **Now**, look for the key features that you identified in Mystery Fossil #3-- are they also present in fossils from each species you listed in the chart? If yes, place a check mark in the box for that species. If no, place an X in the box.

Key features of  
MYSTERY FOSSIL #3

1.					
2.					
3.					
4.					
5.					

STEP 13

1 **Next**, analyze the data in your chart and discuss with your partner: *What SPECIES of dinosaur does your evidence point toward?*

SECTION 4  
Explanation and Argument

STEP 14

Now that you have identified the TYPE and SPECIES of dinosaur you think the Mystery Fossils come from, it is time for your group to prepare an argument to share with your peers.

OUR EXPLANATION:

1 The TYPE of dinosaur is: \_\_\_\_\_

The SPECIES of dinosaur is: \_\_\_\_\_

OUR ARGUMENT:

2 DISCONFIRMING EVIDENCE (Why did you rule out the other two types of dinosaurs? And, rule out the other species?)	HOW THIS EVIDENCE SUPPORTS OUR EXPLANATION

3 STRONG EVIDENCE (For the type and species of dinosaur)	HOW THIS EVIDENCE SUPPORTS OUR EXPLANATION

4 WEAK EVIDENCE (For the type and species of dinosaur)	HOW THIS EVIDENCE SUPPORTS OUR EXPLANATION

STEP 16

1 Discuss the questions below with your group as you prepare to share your argument with your peers.

1. What could make you doubt your explanation?
2. What could make your explanation stronger?