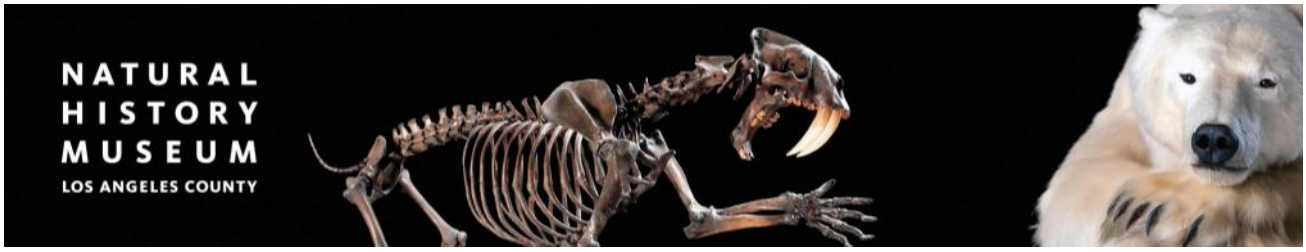


Mystery Mammal

2nd Grade

Duration
Pre-Visit: 40 minutes
Museum Visit: 60 minutes
Post Visit: 50 minutes

Location
Age of Mammals Hall

Supplies
- Worksheet
- Pencil
- Clipboard (optional)
- Sticky Notes

Standards
NGSS
2-LS2-2, 2-LS4-1
S+E Practices
1,3,4,6,7,8
CCSS ELA
W.4
CA State
ELA Grade 2
Writing Applications 2.0, 2.2
Science Grade 2
Investigation and Experimentation 4.a.d

Vocabulary
Mammal · Observe · Plausible · Random

Student Work

Concepts

- Scientists make hypothesis (predictions) based on observable evidence.

Objectives

- Students will make and record observations of an ancient mammal fossil.
- Students will use observations to formulate and support a hypothesis.
- Students will develop questions and perform investigations.

Outline

1. In one classroom session before visiting the Museum, review the mystery mammal — the *Paleoparadoxiid*. Discuss and practice the scientific method of forming a hypothesis (prediction) based on observations, not guesses.
2. During a trip to the Museum explore the Age of Mammals exhibit and have students form hypotheses based on their observations of both the mystery mammal and a specimen of their choice.

Pre-Visit

In your classroom, distribute worksheets 1 and 2 of this packet. Have students study the picture of the *Paleoparadoxiid* (mystery mammal) on worksheet 1 and discuss the following question: **what can you predict about how it moved and where it lived?** Have students write their response on their worksheet.

Next, explain to students that when scientists study mammals they make predictions, or hypotheses, based on observed patterns and not random guessing. Recreate worksheet 2 on easel paper and do the activity with the whole class—it will offer students an experience with this type of investigation. Write two statements, each one representing either a plausible prediction from the picture or a random guess. Students will work together to figure out whether each is plausible or random and why. Here are some examples:

- Example 1: The sea cow ran fast through a jungle.
  Random guess because there is nothing in the picture that shows me it can run.
- Example 2: The sea cow swam by moving its flippers.
  Plausible because I can see in the picture it had a flipper and I know animals that have flippers swim.

Ask students to come to a consensus in their group about what supports their hypothesis (which predictions are plausible). Then as a whole class, label the statements with the words "Plausible" or "Random" and discuss why. Each group can then go back to the predictions they wrote and choose one observation to write on a sticky note. Each group will then place their sticky note on the chart paper to be discussed by the class.

Finally, prepare the students for their visit to the Natural History Museum by letting them know that the essential question they will be trying to answer is: **how do we learn about mammals?**

Use easel paper to create a KWL chart (what you **know**, what you **want** to know, what you **learned**). Ask the students:

- Now that we have gone through the process of investigation, the way a scientists would, what do you **know** about what scientists do to learn about mammals?
- What do you **want** to know about how scientists learn about mammals?

Museum Visit

At the Museum encourage students to walk around the Age of Mammals Hall (Mezzanine level) and look at all the displays. Ask students to think about how we learn about mammals.

Gather students in front of the mystery mammal display and ask the following questions:

- What do you see?
- How do you think this animal moved? Why is that a plausible prediction to make?

Have students work with a partner to complete worksheet 3. Students will walk around the Age of Mammals Hall, pick another animal, and record their predictions about how they think that animal moved. They will also write why their prediction is plausible.

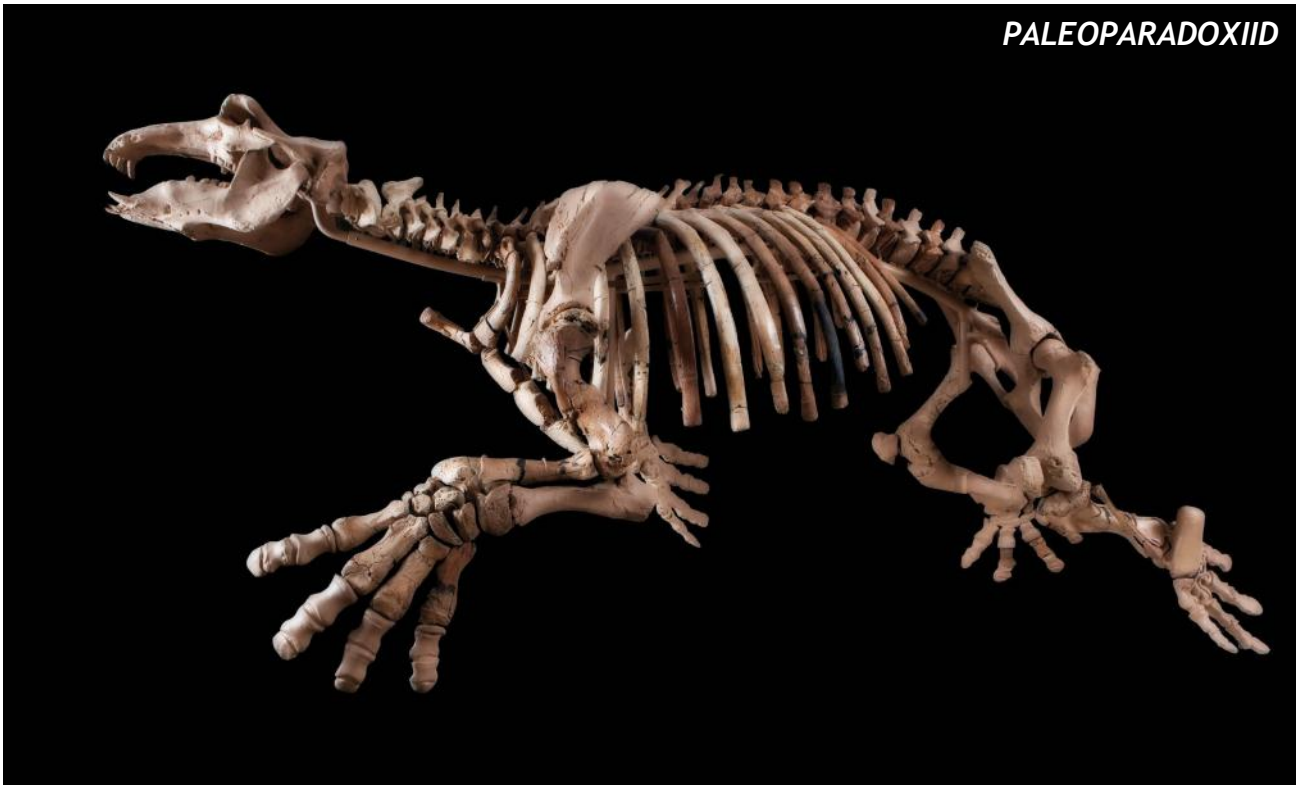
Post-Visit

Once you're back in the classroom, complete the KWL chart from the "Pre-Visit" activity. Ask students: "What did you learn about mammals?" Discuss what students learned and add to chart.

Talk to students about the steps scientists take to learn about animals: observation, prediction, proving plausibility. Ask the class to fill out worksheet 3 about the scientific process using the information they gathered at the Museum about the mammal they observed (this can be done independently or with a partner). Students can present their work to the whole group, a small group, or a partner and the predictions written by the students can be checked to see if they are plausible.

The Mystery Mammal

Scientists use fossils to figure out how ancient animals used to live! Observe the fossil below and write down a hypothesis (prediction) about how this animal moved and what kind of habitat it lived in using the prompts below.



I hypothesize that the *Paleoparadoxiid* moved by_____

because _____

_____

_____

_____

I hypothesize that the *Paleoparadoxiid* lived in a _____

habitat because _____

_____

_____

_____

Mystery Mammal

Observe and Hypothesize

In the box below draw the mystery mammal, then circle the parts of the body you hypothesize (predict) helped it move around it's habitat.

Support the Hypothesis

Explain why your prediction is plausible by recording observations that support the hypothesis.

Mystery Mammal

More Mammal!

Pick another fossil in the room to observe.

Name of Animal: _____

Observe

In the box below, draw the animal and write down observations about it's body:

Hypothesize

I predict that this animal moved by_____

_____

_____

_____

Support the Hypothesis

My hypothesis is plausible because… (use observations!) _____

_____

_____

_____