



Modern Detectives for an Ancient World

7th Grade

Duration

Pre-Visit: 50 minutes

Museum Visit: 50 minutes

Post Visit: 50 minutes

Location

Dinosaur Hall

Supplies

- Worksheet
- Pencil
- Clipboard (optional)

Standards

[NGSS](#)

MS-LS2-2, MS-LS4-1, LS4.A

[S+E Practices](#)

1, 6, 7

[CCSS ELA](#)

SL.1.d, W.1, W.7

[CA State](#)

Life Science 3.c.e.

4.a.b.e.g, 7.b.c

Vocabulary

Evidence

Hypotheses

Prediction

Observation

Concepts

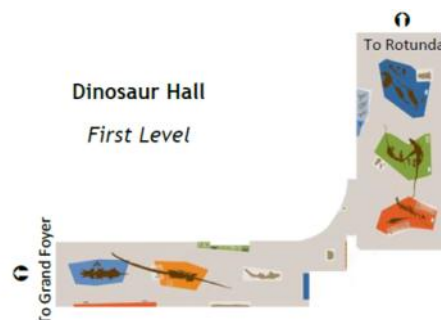
- Independent lines of evidence from geology, fossils, and comparative anatomy provide the bases for the theory of evolution.
- Extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient for its survival.
- Fossils provide evidence of how life and environmental conditions have changed.

Objectives

- Students will collect information and evidence as part of a research project.
- Students will share a logical connection among hypotheses, science concepts, tests conducted, data collected, and conclusions drawn from the scientific evidence.

Outline

1. In one classroom session before visiting the Museum, review paleontology and try to solve a fossil mystery. Students will write a statement about what they think is a fact about dinosaurs.
2. At the Museum students will look for evidence to support or oppose their statement, then revise and refine the statement.
3. Back in the classroom, students will share their statements and discuss why they changed or not. Complete an optional culminating activity.



Pre-Visit

In your classroom, briefly review paleontology with your students. Ask them to come up with some ideas about what a paleontologist does, what they need to do their job well, and finally have them come up with some characteristics about what they and a paleontologist might have in common.

Then, introduce the first worksheet (Side one: Ancient Evidence, side two: Breaking News!). Have students work in pairs to describe what they see in the fossil prints and a possible explanation of what is happening on side one. Then have a group discussion sharing details in the picture and possibly expanding the story to include aspects of the organisms in the story (i.e. speed, whether they walked on 2 legs or 4, what they may have looked like, modern day animals that would be similar to them, etc.). Also, see if students came up with different scenarios. Share that paleontology is based on the observations and possible explanations. There can definitely be more than one explanation that can explain these prints.

Have students flip the worksheet over to side two, and allow them to work in pairs to see if this new information changes their story.

Finally, have students generate statements about what they know to be true about dinosaurs. Have the students check with their teacher to make sure the statement coincides with information in the Museum. You may choose to have them write this on the Museum worksheet at well.

Museum Visit

At the Museum distribute the second worksheet (Side one: Initial Statement, side two: Revised Statement) and have students explore the Dinosaur Hall to gather research. Note, only the first page of this worksheet needs to be completed at the Museum. The rest may be completed as homework, or back in the classroom.

Post-Visit

Back in the classroom, as a class or in small groups, ask students to share their initial and revised statements and discuss why they did or why they did not change their minds. You may choose to have students continue with one of the optional culminating activities below.

Variations and Extensions

Take the research further, have students gather more information about their statement and participate in one of the following activities:

- Write a scientific report discussing their statement and the evidence supporting and disproving it.
- Participate in a debate, small groups or students will debate whether the statement is accurate or not. They will use the evidence they researched to support their stance.
- Make data cards from your trip to the Museum that support and disprove your statement. Each card will have a different piece of evidence. Students in small groups will evaluate the card clues and try to figure out what happened.
- Students make a video or act out their statement including evidence from their Museum visit.



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Ancient Evidence

Carefully examine the fossil foot prints below and formulate an hypothesis about what happened. Use the table below to organize your ideas and provide evidence to your inferences.



What happened here? <i>Inferences</i>	What do you see that makes you say that? <i>Observable Evidence</i>



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Breaking News!

Paleontologists have been examining the fossil remains found at the scene pictured on the first page. They have discovered there were two individuals, and evidence from their skulls suggest they are both herbivores.

Does this new evidence change your hypotheses? Why or why not?

Discover and Revise

Like all science, paleontologists often change hypotheses or ideas about dinosaurs with the discovery of new evidence. Below, write down a statement of fact you think you know about dinosaurs. During your visit to the Natural History Museum, look for evidence in the Dinosaur Hall that supports or opposes your statement.



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Initial Statement

Write your initial statement below.

Research

Use the table below to record your research as you explore the Dinosaur Hall

Supporting Evidence	Opposing Evidence

