

Compare dinosaurs and their descendents, modern birds.

Overview

A video introduction explains that most dinosaurs went extinct more than 60 million years ago, but some survived and became the ancestors of modern birds. Through a bird-watching activity, students look for similar qualities in different groups of animals and build their understanding of how these animals are related.

Guiding Question

What is the relationship between birds and dinosaurs, and what evidence shows this relationship?

Objectives

Students will be able to cite evidence that supports the claim that birds are descended from dinosaurs.

Background

65–66 million years ago, a meteor or asteroid roughly the size of Boston hit the Earth off the Yucatan Peninsula in what is now Mexico. This impact event caused about 75% of life on Earth to become extinct, including most of the dinosaurs. Some were killed on impact, but the lasting effects from the impact caused most of the destruction. The impact caused multiple fires and tsunamis, and it pushed debris from the crater into the atmosphere, where it blocked out sunlight. Most dinosaurs that survived the impact itself could not find enough food and ultimately went extinct. But some of the smaller dinosaurs found enough food and survived!

As scientists have discovered more dinosaur fossils, they have learned more about the species that went extinct and those that survived. Using evidence, including what the animals looked like, what they ate, and how they reproduced, scientists have discovered that birds are in fact descended from these surviving dinosaurs. Now, people can observe birds in their natural habitats to learn more about how dinosaurs behaved back in the Mesozoic Era.

Time: 15–20 minutes

Grade Level: 3

Vocabulary

- Extinct
- Evolved
- Ancestor
- Evidence
- Feathers
- Wings
- Claw

Standards

NGSS 3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exist in a group of similar organisms.

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

CCSS.ELA-Literacy.W.3.8.

Preparation

For this activity, the educator will need the following:

- Video: Did the Dinosaurs Disappear? (1:46) ([English](#) | [Spanish](#))
- A way to show the video to students

For this activity, each student will need the following:

- 1 copy of Looking for Dinosaurs ([English](#) | [Spanish](#))
- 1 pencil



EiE® Connections

Continue your classroom activities with these units:

Engineering is Elementary®

Continue your classroom activities with these units:

Engineering is Elementary®

- *Designing Knee Braces*
- *Replicating an Artifact*

Museum of Science Connections

Check out MOS at Home for more dinosaur programming, such as [Ask a Scientist: Dinosaurs](#).

Listen to a variety of Pulsar podcast episodes: "[What if the Dinosaurs Hadn't Gone Extinct?](#)", "[Why Did Dinosaurs Have Feathers?](#)", and "[Did T. Rex Eat Stegosaurus?](#)"

Visit the [Modeling the Mesozoic](#) exhibit in person at the Museum of Science, Boston, to see several model dinosaurs up close. Make more observations of their relatives in another Museum exhibit, [A Bird's World](#).

Try the [Bird Flight Patterns](#) virtual exhibit to make observations of birds in action.

Family Connections

Continue the learning at home with [EiE Families and STEM Events](#) or [Family STEM Activities](#) from MOS at Home.

Credits

MOS at School programs are offered at no cost, thanks to the generosity of the Akamai Foundation, Bloomberg Philanthropies, BNY Mellon, Gordon Foundation, Hood, Lincoln and Therese Filene Foundation, Lowell Institute, Mabel Louise Riley Foundation, MathWorks, Richard K. Lubin Family Foundation, Sanofi, and TJX.

Compare dinosaurs and their descendents, modern birds.

Activity Instructions

These steps offer support for implementing the *Did the Dinosaurs Disappear?* video introduction and follow-up activity with students.

1. Before showing the video introduction, discuss these questions:

Q: What do you already know about dinosaurs?

A: Accept all responses. Possible answers may include large reptile- or bird-like creatures that lived many millions of years ago. They likely had feathers and made up a majority of animals 220–65 million years ago. Humans have learned about dinosaurs from fossilized bones and tracks.

Q: Are any dinosaurs living today? If not, what happened to them? If so, where can we find them?

A: Accept all responses. A possible response is that most dinosaurs went extinct when an asteroid hit the Earth, some are still around as they evolved into modern day birds.

Q: Why would you want to study dinosaurs?

A: Accept all responses. Possible responses include to learn about what Earth was like in the past or to understand the relationship between dinosaurs and modern animals.

2. Play the video *Did the Dinosaurs Disappear?* (1:46). This video shows a comparison of birds and their dinosaur ancestors in the *Modeling the Mesozoic Era* exhibit with a special live animal guest.

watch video

3. After showing the video, discuss these questions:

Q: So what actually happened to the dinosaurs?

A: Possible responses include that most of them went extinct and some of them evolved into birds.

Q: What evidence tells us that dinosaurs and birds are related?

A: Possible responses include their feathers, the shape of their feet, their large eyes, and their claws. Accept all answers.

4. Distribute the *Looking for Dinosaurs* ([English](#) | [Spanish](#)) handouts and pencils to students.
5. Have students observe birds outside, at a window, or in a video (visit the [Cornell Lab of Ornithology's](#) website for live webcams or highlight videos).
6. Ask students to draw or write a description of one of the birds they observed. Have them label the parts they can see, including feathers, toes, claws, eyes, and beak.
7. Have students complete the second page of the handout in small groups or as a class.
8. After completing the activity, discuss these questions:

Q: While you were observing, what evidence did you notice that dinosaurs and birds are related?

A: Accept all responses. Possible responses include they share features such as feathers and three toes, or they have similar behaviors like laying eggs.

Q: What can we study to learn more about how dinosaurs looked and behaved?

A: Accept all responses. Possible responses include fossilized bones, fossilized tracks, modern birds, or other animals that lived during the time of the dinosaurs.

Glossary

Ancestor

a relative from the past

Claw

a curved pointy structure at the end of a toe or finger

Evidence

a clue that helps us find out what happened

Evolved

changed over time

Extinct

no longer existing

Feathers

growths that form a distinct outer covering

Wings

external structures that allow an animal to fly