

**Grade Level:**

1st—3rd

Subject Area:

Language Arts
Science

WI Model Academic Standards:

Language Arts:
C.4.2, C.4.3

Science:

A.4.2, A.4.4
F.4.2, F.4.4

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Dinosaurs

Lesson Guide

Overview:

Students learn how paleontologists use fossils to understand the life histories of dinosaurs during their 165 million years on Earth.

Background:

Paleontology is the study of prehistoric life forms, as represented by the fossils of plants, animals, and other organisms that lived millions of years ago. Paleontologists are not strictly dinosaur scientists, but study all prehistoric life forms to understand how these animals lived and interacted.

Dinosaurs lived on earth approximately 230-65 million years ago, during the Triassic, Jurassic, and Cretaceous periods along with other reptiles, mammals, fish, and insects. There are three different types of fossils: body fossils, trace fossils and resin fossils. Paleontologists learn different things from different fossils including what dinosaurs looked like, what they ate, how they lived, how they moved, and sometimes how they died. Paleontologists also study modern reptiles and birds to understand how dinosaurs may have behaved. They distinguish dinosaurs from reptiles by their unique skeletal features, such as leg structure. Dinosaur legs are situated under the body so that the animal was positioned over them in mammal fashion, rather than slung between them in the typical sprawl of reptiles. Land-dwelling or non-avian dinosaurs share many important features, like leg structure, with modern day birds. In fact, birds are avian dinosaurs—dinosaurs that can fly.

Paleontologists believe all non-avian dinosaurs died approximately 65 million years ago. Based on new geologic evidence, most scientists agree that the dinosaurs died after an asteroid hit the Earth's surface. Fossils cannot tell us everything about dinosaurs, and there are some things paleontologists will never know, such as what dinosaurs sounded like or their coloring. However, paleontologists are steadily learning more about how these animals lived and thrived for 165 million years.

Student Objectives:

1. Students will learn that paleontologists use specific tools and methods to help them search for dinosaur fossils.
2. Students will make inferences about the life of a dinosaur by observing its physical features.
3. Students will gain understanding that life changes over time and learn where dinosaurs fit into the history of the Earth.

Assessments:

1. Students can explain the work of paleontologist and list tools used in their work.
2. Students can distinguish between carnivores, herbivores, and omnivores by making inferences from clues on exhibit in the museum.

3. Students will provide examples of life on Earth before, during, and after the age of the dinosaurs.

Program Vocabulary:

Coprolite: Fossilized dung. Analysis of fossilized remains provides information about the diet and environment of ancient biota.

Impression fossil: Fossils caused when minerals fill the impressions in mud or silt left behind by a plant or animal.

Non-avian dinosaur: Terrestrial animals that lived during the Mesozoic Era, approximately 230-145 million years ago. Dinosaurs are differentiated from other terrestrial reptiles by unique skeletal features such as straight legs instead of legs that go to the side.

Paleontologist: Someone who studies prehistoric life forms, as represented by the fossils of plants and animals.

Resin fossil: A natural resin in geologic deposits.

Trace fossil: Evidence an organism leaves behind such as footprints, eggs, nests, burrows, and droppings.

Enrichment Vocabulary:

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|------------------|---------------|------------------|----------------|
| Adaptation | Asteroid | Atmosphere | Camera |
| Crust | Debate | Details | Discuss |
| Document | Fossil | Erosion | Evidence |
| Explain | Geologic Time | Herbivore | Igneous Rock |
| Metamorphic Rock | Pangaea | Photograph | Picture |
| Plate Tectonics | Probably | Sedimentary Rock | Tectonic Plate |

Teacher Preparation:

Meet your Museum educator in front of the elevator on the first floor five minutes before your scheduled program start time.