

OKLAHOMA ROCKS!

Lesson 4: Northwest Oklahoma and Black Mesa

A real life Jurassic Park existed in Oklahoma, some 250–66 million years ago (mya), during the Mesozoic Era. This time is known as the “Age of the Dinosaurs.” Creatures ranging from amphibians to dinosaurs roamed Oklahoma, leaving fossils that tell us much of their stories. Although there are fossils in the southeast, northwest Oklahoma has proved especially rich in dinosaur fossils. There is even a dinosaur trackway preserved in the Morrison Formation near Kenton, in Cimarron County. Due to erosion, much of the evidence for dinosaurs in other parts of the state is eroded away.



Dinosaur track near Kenton, Oklahoma, shows three toes. The hammer to the left of the track is 16 inches long.

Oklahoma fossils of meat-eating dinosaurs from the Cretaceous Era (146–66 mya) include *Acrocanthosaurus atokensis* and *Deinonychus* (southeast); and Jurassic (200–146 mya) sauropods *Apatosaurus* (weighing 250 tons and 75 feet long, also known as *Brontosaurus*), and *Stegosaurus* recovered from the Morrison Formation (northwest). The giant *Saurophaganax maximus* fossils are unique to Oklahoma.

Fossils help: 1) Establish relative ages of marine and sedimentary rocks; 2) Reconstruct depositional environments and climates; 3) Correlate rock strata around the world; and 4) Understand ancient plant and animal life and how climate change has affected the past.

Activities:

1. Using the geologic time scale <http://ogs.ou.edu/level2-earthscied.php> and internet, think about what Oklahoma was like for dinosaurs. What was the climate like? How far was it to the sea? What other life would they have seen?
2. Looking at the dinosaur footprint pictured with the 16-inch hammer, what might you know about the dinosaur? How would you determine a dinosaur’s weight, size, and how fast he/she was walking based on a trackway?
3. What might you learn about its habitat and when it lived from studying the rocks around the footprint? See: <http://ogs.ou.edu/level2-earthscied.php> and an Oklahoma trackway at: <http://www.travelok.com/listings/view.profile/id.2245> Other tracks can be seen at the website for Dinosaur Ridge outside Denver: <http://www.dinoridge.org/discoveries.html> or at Clayton Lake State Park just west of the OK Panhandle: <http://www.ucmp.berkeley.edu/mesozoic/cretaceous/clayton.html>.

For more information on Oklahoma’s *Acrocanthosaurus atokensis* see:
<http://www.museumoftheredriver.org/dino.html>

For an activity on dinosaur names go to:
<http://www.ucmp.berkeley.edu/fosrec/MunGun4.html>

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