OKLAHOMA ROCKS!

STATE PARKS

BLACK MESA

Black Mesa is located in Oklahoma's panhandle in Northwest Cimarron County. It is the highest point in Oklahoma at 4,973 feet above sea level. Understanding the rocks at Black Mesa, can help us start unlocking secrets about the past! Black Mesa, which is a basalt lava flow, is the only place in the state where we can see evidence of a recent volcanic event, which occurred in South East Colorado about 5 million years ago. It is also the only location in Oklahoma where rocks from both the Jurassic and Triassic are exposed. The Triassic and Jurassic are time periods in the past when dinosaurs roamed the Earth!

Paleontologists have discovered many dinosaur bones and trace fossils from stegosaurus, camptosaurus, apatosaurus, edmontosaurus and diplodocus at Black Mesa. Trace fossils provide us with evidence of an animal's activity, such as feeding, resting, or locomotion. This fossil evidence provides clues to help us understand the past. While dinosaur bones can tell us who was living in the area, their footprints provide us with a unique snapshot of what they were doing! We can use our understanding of modern animals to learn more about life from the past. For example, we can tell:

- if the tracks were made by a carnivorous or herbivorous dinosaur (typically narrow feet with pointed toes indicate a carnivorous dinosaur, and broad feet with rounded toes indicate herbivorous dinosaurs)
- how dinosaurs moved
- how fast or slow they were moving when they made these tracks
- if they moved in herds

Photos courtesy of: www.travelok.com

>> ACTIVITY: ANIMAL DETECTIVES!

Find tracks outside – try looking in the soft mud near ponds or streams. Can you identify the animal? What was the animal doing? How many animals were there?

Now take a look at the dinosaur footprints from Black Mesa. Was this track way made by a carnivorous or herbivorous dinosaur? Do you think it was running or walking?

For younger students: Cut out various dinosaur foot prints (carnivores and herbivores) and have students tell a "story" using dinosaur tracks. Consider how the dinosaurs would be moving and what they would be doing. Once students have told their story, have them try to "read" their classmates stories.

For older students: Often times, we can determine the approximate size and speed of a dinosaur from looking at their footprints. Check out this website from the University of Sheffield to learn more!

http://www.sorbygeology.group.shef.ac.uk/DINOC01/dinocal1.html

For more information about Oklahoma Geology, and links to past editions of Oklahoma Rocks! visit the Oklahoma Geological Survey website: **http://ogs.ou.edu/level2-earthscied.php**

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