

OKLAHOMA ROCKS!

Lesson 3: Uncovering Oklahoma's Mountains



When you look at Baldy Point in Quartz Mountain State Park in southwestern Oklahoma, you are looking at part of the Wichita Mountains. These mountains extend about 50 miles west-northwest from Fort Sill to the town of Granite.

The Wichitas are "fossil" mountains that existed 290–280 million years ago. They were formed from igneous rocks that were left when molten magmas came up from below the Earth's surface and filled in a continental rift. Since 99 percent of Oklahoma's outcropping rocks are sedimentary, these granites and rhyolites are a rare sight!

The adjacent Slick Hills are composed primarily from limestones deposited under shallow seas some 500–480 million years. Uplifts occurred 320–300 million years ago and forced the granites, rhyolites, gabbros, and overlying limestone to the surface.

At a later point in time, these mountains were covered by sediments eroding from the east during the Permian Period 299–251 million years ago. Now, the same red shales that make up the surrounding plains are being eroded away from this area and the Wichitas are actually being uncovered before our eyes!

Questions:

1. Significant rift zones occur in the Earth's surface today. Some of the best known are the East African Rift and the Rio Grande Rift. Find pictures and information about these and other rift zones and write about what you think the rift zone in Oklahoma might have looked like when rifting occurred in what is now the Wichitas area. Would there have been earthquakes? What else was occurring at the time? What life forms were there (see the geologic time scale in the Overview or online at <http://ogs.ou.edu/level2-earthscied.php>).

2. Plan a trip through these beautiful ancient mountains in person. Start with the visitors' center and include a hiking trail and a drive through the area. What other activities would you incorporate? What wildlife might you see? For more ideas and information click on *The Wonder of the Wichitas* brochure link at <http://ogs.ou.edu/level2-earthscied.php>.

This lesson is part of the Newspapers In Education program, Oklahoma Rocks. To learn more visit nie.newsok.com.