



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
1990 Volume III: The U.S. National Parks Movement

The National Parks; Teaching the Geology of America

Guide for Curriculum Unit 90.03.11
by Lois Van Wagner

Within the National Park System we can find outstanding examples of most of the geologic processes which are considered by the eighth grade Earth Science curriculum. This unit examines each process and then uses some of the better known parks as illustrations. Each section investigates the causes and variations of a specific geologic process and then explores a number of parks which manifest those processes.

The first area of study is volcanism, using Hawaii volcanoes (Lassen and Craters of the Moon) as examples of volcanic cones, both shield and composite. Yellowstone is used to study the formation of a caldera and of geysers and hot springs. Devil's Tower in Wyoming illustrates an eroded extinct volcanic plug.

To explore Earth's mobile crust the unit will cover uplift, folding, and faulting. To understand uplift we will look at the Colorado Plateau's outstanding formations, the Grand Canyon, Zion, Bryce Canyon, and Arches. In these parks can be found mesas, buttes, pinnacles, plateaus, and spires weathered and shaped by millions of years of wind, thermal, and water erosion acting on the rising land. The uplift of a granitic batholith can be seen at Mount Rushmore in South Dakota.

Faulting is well exemplified by the Grand Tetons, and basin and range formation is seen in one of our newest large natural parks, Great Basin in Nevada. Folding can be shown at Shenandoah and Great Smokey National Parks.

Erosional formations can be studied in the parks also. The meanders and ox-bows of the Snake River as it winds through the Grand Teton park, as well as a small delta forming in Jenny Lake and another in Lake Clark National Park in Alaska, are good examples of river development. We can look at Death Valley to find excellent alluvial fan formations. Other erosional forms include caves, and the National Park System includes some outstanding examples. Mammoth Cave is the world's most extensive cave, and both Jewel Cave and Wind Cave contain some of the most beautiful and rare limestone and calcite formations, including dog-tooth spar, boxwork, and helictites.

Glaciation is evident at Yosemite, Glacier, and Glacier Bay. These three parks are spectacular and illustrate virtually every glacier-related formation. Glacier Bay is especially useful as it still has extensive, active glaciers. In addition to those western parks, the unit also looks at an eastern park, Cape Cod, and there we find glacial outwash and moraines.

Wind erosion and the formation and movement of sand dunes can be observed at Great Sand Dunes,

Colorado, and Indiana Dunes. Sand-blasting by dry desert winds creates many unusual forms, some of which we see in Arches.

Activities and experiments for concepts presented in each section are included in the appendix as well as some suggested video material to supplement class discussions.

(Recommended for Earth Science, grades 8-9)

Key Words

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