



Fernbank Science Center

Title: Volcanoes, Earthquakes & Asteroid Impacts (4640)

Type: Outreach

Level: 6th Grade

Length: 55 or 85 minutes

Location: Local School

Limit: Full Grade Level

Program Description

The energy and effects of three of the most powerful forces of geologic change are investigated through dynamic demonstrations of volcanic eruptions, earthquakes, and asteroid impacts. This is an assembly presentation designed for either all 6th grade students or a full team and requires a cafeteria, gymnasium, or auditorium with a projection system. It may be scheduled either between 9:00-11:30 AM or 12:30-3:00 PM.

Standards

S6E1. Students will explore current scientific views of the universe and how those views evolved.

f) Describe the characteristics of comets, asteroids, and meteors.

S6E5. Students will investigate the scientific view of how the earth's surface is formed.

a) Compare and contrast the Earth's crust, mantle, and core including temperature, density, and composition.

d) Describe processes that change rocks and the surface of the earth.

e) Recognize that lithospheric plates constantly move and cause major geological events on the earth's surface.

f) Explain the effects of physical processes (plate tectonics, erosion, deposition, volcanic eruption, gravity) on geological features.

Vocabulary

plate tectonics
earthquake
basalt
viscosity

magma
seismometer
granite

volcano
asteroid
rhyolite

eruption
impact crater
andesite

RS Harris 10/26/15

Pre-Visit Activities

Discuss and develop questions about geologic disasters and the landforms they create.

Post-Visit Activities

View these websites: <http://earthquake.usgs.gov/earthquakes/>

<http://www.volcano.si.edu/>

<http://www.passc.net/EarthImpactDatabase/>

Choose three currently active volcanoes, three recent earthquakes, and three impact craters.

1. List the primary type of lava/magma (low viscosity vs. high viscosity)associated with each volcano and the type of rocks (for example, granite or basalt) associated with each one.
2. Compare the shapes of the volcanoes and explain them based on the answers to #1.
3. For each earthquake, list the location, magnitude, and depth.
4. Describe the type of plate boundary associated with each quake.
5. Compare and contrast the shapes of the three impact craters. Develop hypotheses to explain the differences.

Resources

Prentice Hall: Earth Science Georgia, Tarbuck & Lutgens, Unit 3, Chapters 8 & 10; Unit 7, Chapter 23.4.