# Rock and Roll Geology

Edited December 13, 2011

**Grades:** 3 - 6

**Time:** 45 minutes

**Rationale and Context:**

This topic focuses on the concept of geologic change over time with an emphasis on the more recent geologic events in the Lake Champlain Basin. Students will review concepts of the rock cycle and complete tests on local rock samples to better understand the characteristics of rock types found in this region. Using a stream table model, students will compare rapid and gradual change from effects of flooding, erosion and weathering. Coupled with ECHO's *Before the Basin* exhibits, the lesson covers key stories in the geologic history of the lake and our local watershed.

**Teacher Content Knowledge:**

Geology is the study of rocks and soil and the water and gases that surround them. Geologists work to understand the changes that have occurred in the earth and how these changes can influence the topography, human resource management, water quality and patterns of erosion, weathering and sedimentation. Geologists also study volcanoes and earthquakes and the resulting effects to both surface and deep rock layers. Geologic change has implications on everything from species diversity to habitat evolution to climate change.

**Vermont Standard(s):**

| Vermont Standard | Grade Expectations | Inquiry Skills and Content |
|---|---|---|
| 7.1 | S.1 | Make scientific observations about what occurred geologically in the Lake Champlain Basin over time. |
| 7.1 | S.2 | Identify similarities and differences between rocks. |
| 7.1 | S.4 | Test, describe and record results of rock tests. Compare data. |
| 7.15 | S.46 | Observe and describe the properties of rocks.<br>Explain the processes that occur when rocks are changed from one form to another. |
| 7.15 | S.47 | Explore concepts of plate movement, glaciers, ice age and the change over time of both landforms and water in this region. |

**Learning/Behavioral Objective(s):**

1. Using a clock model, review significant events in geologic time from the earth forming to the first human-like animals.
2. Using actual geologic rock tests, explore the properties of rocks found in the Lake Champlain Basin and their potential value to humans.
3. Through hands-on manipulation of a model stream table, reinforce the concepts of rapid and gradual change over time comparing floods, volcanoes and earthquakes to weathering, sedimentation and erosion.
4. Introduce the concept of topography and how water flow provides both power to shape the earth, and acts as a transport mechanism for both geologic matter and pollutants.
5. Using a time line, time cards and props "clues", reveal five significant time periods in the geologic evolution of the Lake Champlain Basin.
6. Conclude with evidence of geologic change caused by human activity.