

SCIENCE - Grade 6

Christ Lutheran School, Costa Mesa, CA

Revised 2008

Goal: The students will develop an appreciation and understanding of God's creation while learning about the Earth through hands-on scientific activities and projects. They will keep a science notebook with questions, predictions, observations and conclusions.

Objectives:

Plate Tectonics and Earth's Structure

1. The student will be able to explain plate tectonics and how they account for the important features of Earth's surface and major geologic events.
 - Evidence of plate tectonics is derived from the fit of the continents, the location of earthquakes, volcanoes, and mid-ocean ridges, and the distribution of fossils, rock types, and ancient climatic zones.
 - Earth is composed of several layers: a brittle lithosphere, convecting mantle, and metallic core.
 - Plates are the size of continents and oceans. They move at rates of centimeter per year in response to movements in the mantle.
 - Earthquakes are sudden motions along breaks in the crust called faults and volcanoes are locations where magma reaches the surface.
 - Major geologic events, such as earthquakes, volcanic eruptions, and mountain building, result from plate tectonics.
 - Explain major features of California geology in terms of plate tectonics.
 - Determine the epicenter of an earthquake and know that the effects of an earthquake on any region vary.

Materials: *Science Voyages: Glencoe Science (California Edition)*, Glencoe/McGraw-Hill, 2001, Internet, *Geology Rocks!*, 1999.

Shaping Earth's Surface

1. The students will be able to explain topography and how it is reshaped by the weathering of rock and soil and by the transportation and deposition of sediment.
 - Water running downhill is the dominant process in shaping the landscape, including California's landscape.

- Rivers and streams are systems that erode, transport sediment, change course, and flood their banks in natural and recurring patterns.
- Beaches are systems where sand is supplied by rivers and moved along the coast by the action of waves.
- Earthquakes, volcanic eruptions, landslides, and floods change human and wildlife habitats.

Materials: Landforms Kit, *Science Voyages: Glencoe Science (California Edition)*, Glencoe/McGraw-Hill, 2001.

Resources

1. The students will be able to identify different sources of energy and materials and how they differ in amounts, distribution, usefulness, and the time required for their formation.

- Use of energy sources is determined by factors that are involved in converting these sources to useful forms and the consequences of the conversion process.
- There are different natural energy and material resources, including air, soil, rocks, minerals, petroleum, fresh water, wildlife, and forests. Classify these as renewable or nonrenewable.
- Know the natural origin of materials used to make common objects.

Materials: *Science Voyages: Glencoe Science (California Edition)*, Glencoe/McGraw-Hill, 2001, Internet

Energy in the Earth System

1. The students will be able to explain how the Earth's surface is affected by the transfer of energy through radiation and convection currents.

- Heat from Earth's interior reaches the surface primarily through convection.
- Convection currents distribute heat in the atmosphere and oceans.
- The differences in pressure, heat, air movement, and humidity result in changes of weather.

Materials: *Science Voyages: Glencoe Science (California Edition)*, Glencoe/McGraw-Hill, 2001

Investigation and Experimentation

1. The students will be able to ask meaningful questions and conduct careful investigations. As a basis for understanding this concept and addressing the content of Earth science, students should develop their own questions and perform investigations.

- Develop a hypothesis.
- Use appropriate tools and technology to perform tests, collect data, and display data.
- Construct appropriate graphs from data.
- Communicate the steps and results from an investigation in written reports and oral presentations.
- Read a topographic map and a geologic map for evidence provided on the maps and interpret a simple scale map.
- Identify change in natural phenomena over time without manipulating the phenomena.

Materials: *Science Voyages: Glencoe Science (California Edition)*, Glencoe/McGraw-Hill, 2001