

Bishop Museum

Science on a Sphere 4th grade Curriculum Overview

Extreme Makeover: Earth Edition

Lesson #1: Are you ready to rock and roll?- Plate Tectonics

Students will learn that the Earth has undergone many changes over time. The Earth is continuously being shaped and reshaped. Some of the changes occur quickly, while others occur more slowly. The Earth today looks much different than it did millions of years ago. This is largely due to *plate tectonics*. Students will learn how *plate tectonics* change the Earth. They will also look at the *plates* covering Earth and, based on how the *plates* are moving, predict what the Earth might look like in the future. Students will then apply knowledge of *plate tectonics* to learn about how the Hawaiian Islands were formed.

STANDARDS AND BENCHMARKS:

Science

Standard 8: Physical, Earth, and Space Sciences

Benchmark: SC 4.8.1 Describe how slow processes sometimes shape and reshape the surface of the Earth

Language Arts

Standard 1: Reading

Benchmark LA 4.1.1 Use new grade-appropriate vocabulary, including homophones and homographs, learned through reading and word study, including root words, affixes, and word origins

Standard 6: Oral Communication

Benchmark LA 4.6.1 Participate in grade-appropriate oral group activities

Lesson #2: It's getting hot in here- Volcanoes

Students will learn that the Earth has undergone major changes over time. Some of the changes occur quickly, while others occur slowly. The Earth today looks much different today than it did many years ago. This is partly due to volcanic activity. *Volcanoes* have greatly affected the Earth's landscape and the changes they've made occur quickly. Students will discover the cause of *volcanoes* and the kinds of effects *volcanoes* can have.

STANDARDS AND BENCHMARKS:

Science

Standard 8: Physical, Earth, and Space Sciences

SC 4.8.2 Describe how fast processes (e.g., *volcanoes*, earthquakes) sometimes shape and reshape the surface of the Earth

Fine Arts

Standard 1: VISUAL ARTS

FA 4.1.1 Use the elements and principles of art and design, such as emphasis, proportion, complementary colors, positive and negative space, and depth, to communicate an idea or mood

Language Arts

Standard 1: Reading

LA 4.1.1 Use new grade-appropriate vocabulary, including homophones and homographs, learned through reading and word study, including root words, affixes and word origins

Standard 6: Oral Communication

LA 4.6.1 Participate in grade-appropriate oral group activities

LA 4.6.8 Adjust dialect to grade-appropriate audience, purpose, and situation.

Math (Extended Activity #6)

Standard 10: Patterns, Functions, and Algebra

MA 4.10.3 Describe the rate of change numerically and verbally based on data recorded in a table or graph

Lesson #3 Are you ready to rumble? Earthquakes

Students will learn that the Earth has undergone major changes over time. Changes are continuing to occur today. Some of the changes occur quickly, while other changes occur slowly. The Earth today looks much different than it did many years ago. The future Earth will also look different than it does today. This is partly due to *earthquakes*. Students will learn how *earthquakes* have changed the face of the planet. Not only can *earthquakes* have a huge impact on landscape, they can also greatly affect the lives of people who live through them.

STANDARDS AND BENCHMARKS:

Science

Standard 8: Physical, Earth, and Space Sciences

SC 4.8.2 Describe how fast processes sometimes shape and reshape the surface of the Earth

Language Arts

Standard 1: Reading

LA 4.1.1 Use new grade-appropriate vocabulary, including homophones and homographs, learned through reading and word study, including root words, affixes, and word origins

Standard 6: Oral Communication

4.6.1 Participate in grade-appropriate oral group activities

Lesson #4 Getting Carried Away- Erosion

Students will learn that the Earth has undergone major changes over time. Changes are continuing to occur today. Some of the changes occur quickly, while other changes occur slowly. The Earth today looks much different than it did many years ago. The future Earth will also look different than it does today. This is due, in part, to *erosion*. Students will learn how *erosion* has changed the face of the planet over time. They will discover how forces such as water and wind can have such powerful impacts on landscape and can completely change the Earth.

STANDARDS AND BENCHMARKS:

Science:

Standard 8: Physical, Earth, and Space Sciences

SC 4.8.1 Describe how slow processes sometimes shape and reshape the surface of the Earth

Lesson #5 Wrapping it up- Plate tectonics, Volcanoes, Earthquakes and Erosion

In the first four lessons, students learned that Earth has undergone major changes over time. Changes are continuing to occur today. Some of the changes occur quickly, while other changes occur slowly. The Earth today looks much different than it did many years ago. The future Earth will also look different than it does today. The Earth is constantly changing due to the forces of *plate tectonics*, *volcanoes* and *earthquakes*. *Erosion*, through the forces of wind, water and glaciers, also changes the landscape. Students will continue looking at how the Earth changes through slow and fast processes.

STANDARDS AND BENCHMARKS:

Science

Standard 8: Physical, Earth, and Space Sciences

SC 4.8.1 Describe how slow processes sometimes shape and reshape the surface of the Earth

SC 4.8.2 Describe how fast processes sometimes shape and reshape the surface of the Earth

Lesson #6 Game Day- Plate tectonics, Volcanoes, Earthquakes, and Erosion

In the first four lessons, students learned that Earth has undergone major changes over time. Changes are continuing to occur today. Some of the changes occur quickly, while other changes occur slowly. The Earth today looks much different than it did many years ago. The future Earth will also look different than it does today. Students will incorporate what they have learned over the unit into a game and a culminating activity.

STANDARDS AND BENCHMARKS:

Science

Standard 8: Physical, Earth, and Space Sciences

SC 4.8.1 Describe how slow processes sometimes shape and reshape the surface of the Earth

SC 4.8.2 Describe how fast processes sometimes shape and reshape the surface of the Earth