HOLLISTON Public Schools

Unit 3: Earth Science

Subject Area: Science	**Course**: 7th Grade Science		
Unit Title: Earth Science	**Grade(s)**: 7th	**Start**: March	**End**: June
Unit Summary: In this unit students will learn how the Earth's surface is constantly changing - being built up and torn down by Earth's natural processes that occur over time. These changes can happen over the small or large scale. Students will take a virtual field trip around the world to study how Earth's ocean basins formed and how Earth's mountains formed. Students will also explore the short term changes that change the surface of the Earth, which include weathering, erosion, earthquakes, volcanic eruptions, floods, and landslides. Students will examine the locations of such natural disasters in order to determine the likelihood of future events.			

Stage 1: Desired Results

Massachusetts Learning Standards

- 7.MS-ESS2-2. Construct an explanation based on evidence for how Earth's surface has changed over scales that range from local to global in size.
- 7.MS-ESS2-4. Develop a model to explain how the energy of the Sun and Earth's gravity drive the cycling of water, including changes of state, as it moves through multiple pathways in Earth's hydrosphere.
- 7.MS-ESS3-2. Obtain and communicate information on how data from past geologic events are analyzed for patterns and used to forecast the location and likelihood of future catastrophic events.
- 7.MS-ESS3-4. Construct an argument supported by evidence that human activities and technologies can mitigate the impact of increases in human population and per capita consumption of natural resources on the environment.

Transfer (Authentic, relevant application of learning to new situations)

Students will be able to independently use their learning to…

- Analyze the implications of earth as a set of interconnected systems -- atmosphere, hydrosphere, geosphere, and biosphere -- when making personal and civic decisions.

Meaning

Enduring Understandings	Essential Questions
Students will understand that… • Changes in Earth's surface range from small (local) to global over time scales that range from seconds to billions of years. • The movement of tectonic plates create many of the features that can be observed on Earth's surface. • The location and timing of natural disasters	**Students will consider…** • What evidence is there that the earth's surface is constantly changing? • How do internal and external factors change Earth's surface over time? • How do scientists use information about past events to predict where and when future

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<td>can be estimated using data collected from past events.
● The cycling of water is due to energy from the sun and gravity.
● The cycling of matter distributes nutrients and energy that living things need and use.</td>
<td>catastrophic events may occur (earthquakes, floods, volcanic eruptions, landslides, etc)?
● What role does the cycling of matter (water, carbon, etc) play in A) shaping the Earth's surface and B) providing the energy and nutrients that living things need.</td>
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<tr>
<td colspan="2">Acquisition</td>
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<td>Knowledge
Students will know…
● Tectonic plate boundaries
● Divergent
● Convergent
● Transform
● Earth Surface Features
● Volcanoes (shield, cinder, strato)
● Deep ocean trench
● Mid-Ocean Ridge
● Volcanic Arcs (Island, Continental)
● Hot Spot Islands
● Mountains
● Rift Valleys
● Fault
● Focus
● Epicenter
● Earth's Layers
● Crust
● Mantle
● Inner/Outer Core
● Earth Surface Processes
● Seafloor Spreading
● Subduction
● Transform Movement
● Mountain Uplift
● Hot Spots</td>
<td>Skills
Students will be skilled at…
● Analyzing evidence in order to draw conclusions.
● Constructing explanations based on evidence.
● Interpreting historical data to predict future events.
● Identifying patterns and trends in data.</td>
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