

## Earth and Space Science (Earth's Interior)

Grade 8 Science      Grade 8 Science

Start Date: August 26, 2013

End Date : September 20, 2013

<p>Unit Overview</p> <p>Focus is on the physical features of Earth and how they formed. This is to include the interior of Earth, the rock record, plate tectonics and landforms.</p>	<p>Content Elaborations</p> <p>It is important to provide the background knowledge structure and composition of the interior of Earth through graphics, charts, digital displays and cross sections. Actual data from the refraction and reflection of seismic waves and how scientists have determined the different layers of the Earth through technological advances relating to understanding the Earth's interior in this content.</p> <p>Earth and other planets in the solar system form differentiated layers. Planetary differentiation is a process in which denser materials sink to the center, while less dense materials stay on the surface. Differentiation occurred approximately 4.6 billion years ago (College Success, 2009).</p> <p>In addition to the composition of Earth's interior, the relationship of energy transfer, transformation of the mantle and crust are essential in understanding sources of Earth's internal heat.</p>	<p>Unit Resources</p> <p>Activity: <b>Building Models of the Earth</b>          Lab: <b>Interior of Earth (Whoppers, peanut butter, and graham cracker)</b>          Textbook: Chapter 7          Study Island Enrichment          Skill Builders</p>
<p>Unit Vocabulary</p> <p>seismic waves          radioactive elements          convection currents          mantle          inner core          outer core</p>	<p>Enduring Understandings (Big Ideas)</p> <p><b>The composition and properties of Earth's interior are identified by the behavior of seismic waves.</b></p> <p>The refraction and reflection of seismic waves as they move through one type of material to another.</p>	<p>Connections</p>

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crust lithosphere asthenosphere mesosphere tectonic plate	another is used to differentiate the layers of Earth's interior. Earth has an inner and outer core, an upper and lower mantle, and a crust.  The formation of the planet generated heat from gravitational energy and the decay of radioactive elements, which are still present today. Heat released from Earth's core drives convection currents throughout the mantle and the crust.	
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### Standards

#### **OH Academic Content Standards - Science (2011) - Grade 8**

Strand ESS Earth and Space Science

Topic ESS.1 This topic focuses on the physical features of Earth and how they formed. This includes the interior of Earth, the rock record, plate tectonics and landforms.

Content Statement ESS.1.1 The composition and properties of Earth's interior are identified by the behavior of seismic waves.

ESS.1.1.a The refraction and reflection of seismic waves as they move through one type of material to another is used to differentiate the layers of Earth's interior. Earth has an inner and outer core, an upper and lower mantle, and a crust.

ESS.1.1.b The formation of the planet generated heat from gravitational energy and the decay of radioactive elements, which are still present today. Heat released from Earth's core drives convection currents throughout the mantle and the crust.

Content Statement ESS.1.2 Earth's crust consists of major and minor tectonic plates that move relative to each other.

ESS.1.2.b Convection currents in the crust and upper mantle cause the movement of the plates. The energy that forms convection currents comes from deep within the Earth.

Student Assessment Chapter Test Study Island Assessment Gizmo Assessment	Unit Reflection
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### Planet Earth

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<b>Content</b>	<b>Skills</b>	<b>Assessment</b>
A. Earth's Composition	A. Earth's Composition <ol style="list-style-type: none"><li>1. Identify the elements that make up the core of the Earth</li><li>2. Identify and name the layers of Earth</li><li>3. Evaluate different layers of the Earth based on densities</li><li>4. Describe the process of convection within the Earth's core and how it relates to the movement of plates</li><li>5. Create a model of the layers of the Earth</li><li>6. Identify the layers of the Earth by their physical properties</li><li>7. Describe a tectonic plate</li><li>8. Explain how scientists know about the structure of the Earth's interior</li></ol>	