Earth and Space Science (The Rock and Fossil Record)

Grade 8 Science Grade 8 Science
Start Date: September 23, 2013
End Date : October 11, 2013

Unit Overview	Content Elaborations	Unit Resources
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.	The representation of the age of the Earth must i immensity of geologic time, as this is a very dif used to determine the age of the Earth are an im grades, fossils are used to compare what once li Earth's age and the age of the fossils were not i years was not age-appropriate). In grade 8, the c toward understanding relative dating. Superposi fossils play an important role in determining rel important role in absolute age. The inclusion of developing technological advances) is importan Uniformitarianism can be an important key in u the environmental conditions that existed throug indicate specific environments and climate cond Relating Earth's climate history to present-day c ice core sampling as well as evidence from the g Using actual data to generate geologic maps of l the real world. Field studies or geologic researc formations and interpret the environment that ex and interpreting the data to draw conclusions ab this content statement.	Textbook: Chapter 6 Gizmo Lab: **Half-Life** Lab Activity**: Candium (Skittle) Lab**
Unit Vocabulary	**Enduring Understandings (Big Ideas)**	**Connections**
Uniformitarianism	**Evidence of the dynamic changes of Earth's**	

Catastrophism Paleontology Relative Dating Superposition Geologic Column Uncomformity Absolute Dating Isotope Radioactive Decay Radiometric Dating Half-life Fossil Trace Fossil Mold Cast Index Fossil	**surface through time is found in the geologic record.** Earth is approximately 4.6 billion years old. Earth history is based on observations of the geologic record and the understanding that processes observed at present day are similar to those that occurred in the past (uniformitarianism). There are different methods to determine relative and absolute age of some rock layers in the geologic record. Within a sequence of undisturbed sedimentary rocks, the oldest rocks are at the bottom (superposition). The geologic record can help identify past environmental and climate conditions.	

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

ESS.1.2.a Historical data and observations such as fossil distribution, paleomagnetism, continental drift and sea-floor spreading contributed to the theory of plate tectonics. The rigid tectonic plates move with the molten rock and magma beneath them in the upper mantle.

Content Statement ESS.1.4 Evidence of the dynamic changes of Earth's surface through time is found in the geologic record.

ESS.1.4.a Earth is approximately 4.6 billion years old. Earth history is based on observations of the geologic record and the understanding that processes observed at present day are similar to those that occurred in the past (uniformitarianism). There are different methods to determine relative and absolute age of some rock layers in the geologic record. Within a sequence of undisturbed sedimentary rocks, the oldest rocks are at the bottom (superposition). The geologic record can help identify past environmental and climate conditions.

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Student Assessment	Unit Refection
Chapter Test Study Island Assessments Gizmo Assessments	

Rock and Fossil Record

Content	Skills	Assessment
A. Rock and Fossil Record	A. Rock and Fossil Record 1. Compare uniformitarianism and catastrophism 2. Describe how the science of geology has changed over the past 200 years 3. Explain the role of paleontology in the study of Earth's history 4. Explain how relative dating is used in geology 5. Explain the principle of superposition 6. Describe how the geologic column is used in relative dating 7. Identify two events and two features that disrupt rock layers 8. Explain how physical features are used to determine relative ages 9. Describe how radioactive decay occurs 10. Explain how radioactive decay relatesto radiometric dating 11. Identify four types of radiometric dating 12. Determine the best type of radiometric dating to use to date an object 13. Describe five ways that different types of fossils that are not part of organisms 14. Explain how fossils can be used to determine the history of changes in environments and organisms 15. Explain how index fossils can be used to date rock layers	