MP2a-The History of Planet Earth

Content Area: **Science**
Course(s): **Science 4**
Time Period: **Marking Period 2**
Length: **MP2**
Status: **Published**

Essential Questions

- What can rock formations teach us about the history of Earth?
- What can fossils teach us about the history of Earth?
- How can living things affect the physical characteristics of their regions?

Big Ideas

- Certain features on earth can be used to order events that have occurred in a landscape.
- Scientists analyze and interpret data from fossils to learn about the past.
- Living things can affect the physical characteristics of their environments.

Cross-Curricular Integration

Integration Area: Math

4.MD.A Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

Activity:

Students use rulers to measure rock and mineral samples to the nearest centimeter.

Science and Engineering Practices

Developing and Using Models:

- Develop and/or use models to describe and/or predict phenomena

Science and Society

Doug Ming

NASA scientist who studied soil and hope to grow plants in extreme conditions like Mars and the Moon

STEM/STEAM

Students will be challenged to produce a variety of solutions to how erosion is altering landforms at national parks.

Students will be "hired" by National Parks Service to help prevent erosion
Learn about a National Park, with a focus on the natural formations there and how they change due to erosion
Propose a way to help reduce the effects of erosion
Students will be researching, creating a slideshow, drawings, and presenting
Reflect on pros and cons of your proposed solution to erosion
How will these solutions impact the living and nonliving organisms there? Will it impact tourism?

Project-Based Learning
Problem-Based Learning
Reflection / Redesign
Creating Real-world Connections
Foster Design Thinking
Promoting Empathy

Explore historical figures that were involved in the creation of national parks
Based on geography, what populations are near or have been affected by the National Park you are working on?

Enduring Understandings

The History of Planet Earth

4-ESS1.C Local, regional, and global patterns of rock formations reveal changes over time due to earth forces, such as earthquakes. The presence and location of certain fossil types indicate the order in which rock layers were formed.

Biogeology

4-ESS2.E Living things affect the physical characteristics of their regions.

Focus Areas

Knowledge

- Sedimentary rocks form in layers and fossils in these layers can help geologists determine how old the rocks are relative to one another.
- All living things affect the physical characteristics of their environment.

Skills

- Create a model of fossils in sedimentary rock layers.
- Determine what the youngest and oldest layer of a rock is based on the Law of Superposition.

Understanding

- Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.

Resources

Primary Resource

Pearson Interactive Science, 2016

- Chapter 5: Ecosystems

Secondary Resources

Pearson Leveled Readers

- *Ecosystems*
- *Ecosystem Life*
- *Life in a Pond*

Scientific Inquiry

Core

- Relative Dating with Fossils Lab