**1st Grade Core Knowledge**

**Science**

**Earth**

**Summary:** In this domain, students will learn that the earth is made of three distinct layers-core (inner and outer), mantle, and crust. Students will learn that the properties of the earth’s layers may be studied by observing volcanoes and geysers. They will learn that there are three main types of rocks (igneous, sedimentary, metamorphic) and that these rocks are made of one or more minerals.

**The Big Idea:** Earth is a huge sphere covered by oceans and continents. The inside of Earth consists of three distinct layers and is responsible for certain phenomena.

**Colorado State Standards:**

1.3.1.a. Identify and represent similarities and differences such as the texture, size, color, and shape of various materials on Earth

1.3.1.b. Sort, group, and classify Earth’s materials based on observations and explorations

1.3.1.c. Make predictions about how a material on Earth might be useful based on its properties

1.3.1.d. Communicate ideas about the differences between soils from different places

1.3.1.e. Use a variety of tools to observe, analyze, record, and compare Earth’s materials

3.3.1.a. Investigate and identify two or more ways that Earth’s materials can be broken down and/or combined in different ways such as minerals into rocks, rock cycle, formation of soil, and sand

5.3.2.a. Analyze and interpret data identifying ways Earth’s surface is constantly changing through a variety of processes and forces such as plate tectonics, erosion, deposition, solar influences, climate, and human activity

5.3.2.b. Develop and communicate an evidence based scientific explanation around one or more factors that change Earth’s surface

**Common Core Standards**:

**L1.5** With guidance and support from adults, demonstrate understanding of word relationships and nuances in word meanings.

**a.** Sort common objects into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent.

**RI1.1** Ask and answer questions about key details in a text.

**RI1.2** Identify the main topic and retell key details of a text.

**RI1.3** Describe the connection between two individuals, events, ideas, or pieces of information in a text.

**RI1.6** Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.

**RI1.7** Use illustrations and details in a text to describe its key ideas.

**RI1.8** Identify the reasons an author gives to support points in a text.

**RI1.10** With prompting and support, read informational texts appropriately complex for grade 1.

**RL1.1** Ask and answer questions about key details in a text.

**RL1.2** Retell stories, including key details, and demonstrate understanding of their central message or lesson.

**RL1.3** Describe characters, settings, and major events in a story, using key details.

**SL1.1** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.

**SL1.4** Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.

**W1.1** Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.

**W1.2** Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

**W1.8** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

**Core Knowledge Unit:**

1. What is inside the Earth

* Inside the earth

-Layers: crust, mantle, core

* Volcanoes and geysers
* Rocks and minerals

Formation and characteristics of different kinds of rocks: metamorphic, igneous, sedimentary

Important minerals in the earth (such as quartz, gold, sulfur, coal, diamond, iron ore)

**Core Knowledge Language Arts:**

1. Listening and Speaking

A. Classroom Discussion

* Participate in age appropriate activities involving listening and speaking.

1. Presentation of Ideas and Information

* Provide simple explanations.
* Give oral presentations about personal experiences, topics of interest, and/or stories, using appropriate eye contact, volume and clear enunciation.

1. Comprehension and Discussion of Read-Alouds – All Texts

* Prior to listening to a read-aloud, identify what they know and have learned that may be related to the specific story or topic to be read aloud.

1. Comprehension and Discussion of Read-Alouds – Nonfiction and Informational Text

* With assistance, categorize and organize facts and information within a given topic.

1. Reading

B. Reading Comprehension – All Texts

* Prior to reading, identify what they know and have learned that may be related to the specific story or topic to be read.

**Previous Unit:** None (First science unit of the year)

**Prior Knowledge:**

Kindergarten

1. Oceans and Continents

**Next Unit:** Solar System

**What Students Will Learn in Future Grades:**

Fourth Grade

1. The Earth’s Layers

* Crust, mantle, core (outer and inner)
* Movement of crustal plates
* Earthquakes-faults, San Andreas fault, seismograph and Richter scale, Tsunamis
* Volcanoes-magma, lava and lava flow, active, dormant, or extinct: Vesuvius, Krakatoa, Mount St. Helens
* Hot Springs and geysers: Old Faithful
* Theories of how the continents and oceans were formed: Pangaea and continental drift

1. How Mountains Are Formed

* Volcanic mountains, folded mountains, fault-black mountains, dome-shaped mountains
* Undersea mountain peaks and trenches

1. Rocks

* Formation and characteristics of metamorphic, igneous, sedimentary rock

1. Weathering and Erosion

* Physical and chemical weathering
* Weathering and erosion by water, wind, and glaciers
* Formation of soil: topsoil, subsoil, bedrock

**Cross Curricular Links:** None for this unit.

**Additional Resources:**

For teachers and students:

* *Kids Discover Magazines,* published by Kids Discover
* *Geo Safari Rock Collections,* (metamorphic, sedimentary, igneous, minerals, fossils)
* *Rocks and Fossils,* published by Kingfisher Young Knowledge
* *Rocks and Minerals,* by Judy Nayer