Unit III: Earth's Materials

Content Area: **Science**
Course(s): **Science 2**
Time Period: **February**
Length: **Jan 25 - April 8**
Status: **Published**

Enduring Understandings

Earth materials are formed by various natural processes and can be used in different ways.

These systems continually interact at different rates of time, affecting the shape of the Earth’s surface regionally and globally.

Soil is a product of the interactions of the Earth Systems.

The Earth System includes a variety of materials in solid, liquid and gaseous form.

Earth materials absorb and reflect the sun's energy differently.

things can be human-created or naturally occurring.

Erosion and deposition result from the interaction among air, water, and land.

Matter has properties (color, hardness, odor, sound, taste, etc.) that can be observed through the senses.

Objects have properties that can be observed, described, and/or measured: length, width, volume, size, shape, mass or weight, temperature, texture, flexibility, reflectiveness of light.

Measurements can be made with standard metric units and nonstandard units.

The material(s) an object is made up of determine some specific properties of the object (sink/float, conductivity, magnetism).

Properties can be observed or measured with tools such as hand lenses, metric rulers, thermometers, balances,

magnets, circuit testers, and graduated cylinders.

Objects and/or materials can be sorted or classified according to their properties.

Essential Questions

What materials make up the Earth?

What kind of simple tools are used to help determine the properties and how are the tools used?

How are properties used to identify, sort, and classify rocks and minerals?

Content

Literature Connections

Planet Earth Inside Out by Gail Gibbons

The Magic School Bus Inside the Earth by Joanna Cole

Everybody Needs A Rock by Byrd Baylor

Eyewitness Books, Rocks and Minderals by Dr. R.F. Symes

How to Dig a Hole To The Other Side of the Earth by Faith McNulty

Rocks Are Everywhere by Cheryl Rice

Stone Soup by Marcia Brown

Sylvester And the Magic Pebble by William Steig

Skills

Observe and compare rocks and minerals.

Use tools to collect data on rocks and minerals.

Investigate the hardness of minerals and place minerals in order according to their hardness.

Investigate the color, luster, texture, and crystal shape of minerals. Use the data to compare minerals.

Identify rocks and minerals according to their physical properties.

Investigate rocks to determine if they contain calcite.

Investigate rocks to determine their mineral composition.

Justify the identification of rocks and minerals using evidence.

Share and compare data.

Communicate the results of investigations.

Standards

SCI.2	Structure and Properties of Matter
SCI.2	Earth's Systems: Processes that Shape the Earth
SCI.2-ESS2-2	Develop a model to represent the shapes and kinds of land and bodies of water in an area.
SCI.2-ESS2-1	Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.
SCI.2-ESS2-3	Obtain information to identify where water is found on Earth and that it can be solid or liquid.
SCI.2-ESS1-1	Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
SCI.2-PS1-4	Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
SCI.2-PS1-2	Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.
SCI.2-PS1-3	Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.
SCI.2-PS1-1	Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.