

Unifying Theme: Landforms

Essential Standards and Clarifying Objectives

4.P.2 Understand the composition and properties of matter before and after they undergo a change or interaction.

4.P.2.1 Compare physical properties of samples of matter: (strength, hardness, flexibility, ability to conduct heat, ability to conduct electricity, ability to be attracted by magnets, reactions to water and fire).

4.E.2 Understand the use of fossils and changes in the surface of the Earth as evidence of the history of Earth and its changing life forms.

4.E.2.1 Compare fossils (including molds, casts, and preserved parts of plants and animals) to one another and to living organisms.

4.E.2.2 Infer ideas about Earth's early environments from fossils of plants and animals that lived long ago.

4.E.2.3 Give examples of how the surface of the Earth changes due to slow processes such as erosion and weathering, and rapid processes such as landslides, volcanic eruptions, and earthquakes.

Unpacking

What does this clarifying objective mean a child will know, understand and be able to do?

4.P.2.1 Students know that samples of matter have many observable properties that can be measured. Students know that samples of matter can be described according to the characteristics of the material they are made from. Students are familiar with, and can test for the following properties: strength, hardness, flexibility, ability to conduct heat, ability to conduct electricity, ability to be attracted to magnets, reactions to water (dissolve) and heat/fire (melt/evaporate).

4.E.2.1 Students know that fossils are evidence of living organisms that one existed on Earth. Students know that fossils share some characteristics based on where, how, and from what they were formed. Students know that some organisms lived long ago are similar to existing organisms, but some are quite different. Students know that organisms that are alive today, will, under the right conditions, leave fossil evidence.

4.E.2.2 Students know that fossils provide information about the environmental conditions that existed when the fossil organism was alive, as well as information about where, when, and how the organism lived.

4.E.2.3 Students know that the surface of the Earth changes over time. Students know that there are many factors that contribute to these changes. Students know that such changes may be slow or rapid, subtle or drastic. Erosion and weathering are processes that change the Earth. Wind, water (including ice), and chemicals break down rock and carry soil from one place to another. Under the right conditions, gravity can cause large sections of soil and rock to move suddenly down an incline. This is known as a landslide. Volcanic eruptions occur when heat and pressure of melted rock and gases under the ground cause the crust of the Earth to crack and release these materials. Solid rock can deform or break if it is subject to sufficient pressure. The vibration produced by this is called an earthquake.