

Science Unit 5: Earth's Place In the Universe (Grade 4)

Content Area: **Science**
Course(s): **Science 4**
Time Period: **Marking Period 3**
Length: **4 weeks**
Status: **Published**

Established Goals/Standards

Please choose the appropriate Goals/Standards from the Standards tab above.

SEL.PK-12.2.2	Recognize the skills needed to establish and achieve personal and educational goals
SEL.PK-12.2.3	Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals
SEL.PK-12.3.1	Recognize and identify the thoughts, feelings, and perspectives of others
SEL.PK-12.3.3	Demonstrate an understanding of the need for mutual respect when viewpoints differ
SEL.PK-12.3.4	Demonstrate an awareness of the expectations for social interactions in a variety of settings
SEL.PK-12.4.1	Develop, implement and model effective problem-solving, and critical thinking skills
SEL.PK-12.4.2	Identify the consequences associated with one's actions in order to make constructive choices
SEL.PK-12.5.1	Establish and maintain healthy relationships
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others
SEL.PK-12.5.4	Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways
SEL.PK-12.5.5	Identify who, when, where, or how to seek help for oneself or others when needed
CAEP.9.2.4.A.1	Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
CAEP.9.2.4.A.2	Identify various life roles and civic and work - related activities in the school, home, and community.
CAEP.9.2.4.A.3	Investigate both traditional and nontraditional careers and relate information to personal likes and dislikes.
CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
4-ESS1-1	Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.
4-ESS1-1.1.1	Patterns can be used as evidence to support an explanation.
4-ESS1-1.6	Constructing explanations and designing solutions in 3– 5 builds on K–2 experiences and progresses to the use of evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems.
4-ESS1-1.6.1	Identify the evidence that supports particular points in an explanation.
4-ESS1-1.ESS1.C.1	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.

Essential Questions

Please add your Essential Questions by clicking on the Lists tab above.

- What is a metamorphic rock and how is it formed?
- What is a sedimentary rock and how is it formed?
- How are aquatic and terrestrial fossils different?
- How do rock layers change over time?
- What are rocks and fossils?
- What are some patterns fossils show us?
- What are tectonic plates and how do they move on the earth?
- What can fossils tell us about ancient environments?
- What is an igneous rock and how is it formed?
- What properties can help us to classify various types of rocks and minerals?

Enduring Understanding

Please add your Enduring Understandings by clicking on the Lists tab above.

- 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.
- Ages of rock layers can be determined by the types of fossils found in them.
- Identify the evidence that supports particular points in an explanation.
- Igneous rocks are formed when magma (molten rock deep within the earth) cools and hardens.
- Metamorphic rocks are formed under the surface of the earth from the metamorphosis (change) that occurs due to intense heat and pressure (squeezing).
- Patterns can be used as evidence to support an explanation.
- Researchers can determine how a living thing moved and where it lived based on the features of its fossil.
- Rock layers form as older layers of sediment are compacted by new layers, which press the lower layers into rock.
- Rocks and minerals can be classified by studying shape, grain size, luster, color, and hardness.
- Science assumes consistent patterns in natural systems.
- Sedimentary rocks are formed from particles of sand, shells, pebbles, and other fragments of material.
- There are eight major plates, or giant slabs of rock, on the surface of the Earth. There are also bunches of minor plates. The plates are like the skin of the planet. The tectonic plates are floating on top of the molten rock and moving around the planet.
- We determine how organisms of the past lived by comparing anatomical traits of organisms.

Content

Students will be able to:

- determine the relative age of a rock layer/fossil
- find patterns in layers of rocks by studying the rock types and fossils
- identify aquatic and terrestrial fossils
- determine patterns in rock layers caused by both fast and slow changes over time
- study fossils to determine the kind of organism they belonged to, how the organism lived, and in what environment it could be found
- understand how rock layers can be affected by events on the planet (earthquakes, weathering, erosion, etc.)
- classify rocks and minerals based on their physical properties
- understand how tectonic plates move and how these movements can cause changes on Earth's surface

Resources

- HMH Science Dimensions textbook
- ActivBoard flipcharts
- Labs Activities
- United Streaming videos
- Brainpop
- Newsel