Science Unit 4: Earth's Systems (Grade 4)

Content Area: **Science**
Course(s): **Science 4**
Time Period: **Marking Period 2**
Length: **6 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-12.3.3	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-12.5.2	Utilize positive communication and social skills to interact effectively with others
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-ESS2-2	Analyze and interpret data from maps to describe patterns of Earth’s features.
4-ESS2-1	Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.
4-ESS2-2.1.1	Patterns can be used as evidence to support an explanation.
4-ESS2-1.2.1	students routinely identify and test causal relationships and use these relationships to explain change. They understand events that occur together with regularity might or might not signify a cause and effect relationship.
4-ESS2-1.3.1	Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon.
4-ESS2-2.4.1	Analyze and interpret data to make sense of phenomena using logical reasoning.
4-ESS2-1.ESS2.A.1	Rainfall helps to shape the land and affects the types of living things found in a region. Water, ice, wind, living organisms, and gravity break rocks, soils, and sediments into smaller particles and move them around.
4-ESS2-2.ESS2.B.1	The locations of mountain ranges, deep ocean trenches, ocean floor structures, earthquakes, and volcanoes occur in patterns. Most earthquakes and volcanoes occur in bands that are often along the boundaries between continents and oceans. Major mountain chains form inside continents or near their edges. Maps can help locate the different land and water features areas of Earth.
4-ESS2-1.ESS2.E.1	Living things affect the physical characteristics of their regions.

Essential Questions

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

- How can maps help us learn about Earth's surface?
- How do wind and ice shape the land?
- How does moving water shape the land?
- What is the difference between weathering and erosion?
- What patterns can we see by studying maps?

Core Ideas

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

- Living things affect the physical characteristics of their regions. (
- Rainfall helps to shape the land and affects the types of living things found in a region. Water, ice, wind, living organisms, and gravity break rocks, soils, and sediments into smaller particles and move them around
- Analyze and interpret data to make sense of phenomena using logical reasoning.
- Cause and effect relationships are routinely identified, tested, and used to explain change.
- Glaciers, or huge masses of moving ice, carve the land and carry rocks and sediments from one place to another.
- Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon.
- Moving water changes the shape of the land by breaking down rocks and by carrying rocks and sediments from one place and depositing them in another.
- Ocean shorelines are exposed to constant weathering and erosion from moving water and wind.
- Patterns can be used as evidence to support an explanation.
- The locations of mountain ranges, deep ocean trenches, ocean floor structures, earthquakes, and volcanoes occur in patterns. Most earthquakes and volcanoes occur in bands that are often along the boundaries between continents and oceans. Major mountain chains form inside continents or near their edges. Maps can help locate the different land and water features areas of Earth.
- Windblown sediments can shape the land and form sand dunes.

Content

Students will be able to:

- investigate how land is shaped by weathering, erosion, and deposition
- distinguish between weathering and erosion
- experiment to find out how wind shapes a desert landscape
- infer how sand dunes form
- experiment to find out how ice can change rock
- identify the layers of the earth
- explore how living things change the shape of Earth's crust
- read various types of maps and analyze patterns

- develop an understanding of plate tectonics

Resources

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