

Unit 3 Overview

Unit Title: Weathering and Erosion

Grade Level: 6

Recommended Pacing:

2 months – block scheduling

Unit Summary:

Many natural features of Earth's surface, such as soil and landforms, are a result of weathering and erosion.

Unit 3 NGSS:

MS-ESS2-1 Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

MS-ESS2-2 Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying times and spatial scales.

Unit 3 ISTE Standards:

1. a-d Creativity and Innovation-Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes through technology.
2. a-d Communication and Collaboration- Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
3. a-d Research and Information Fluency- Students apply digital tools to gather, evaluate, and use information.
4. a-d Critical Thinking, Problem Solving, and Decision Making –Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

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Unit 3 Science and Engineering Practices:

- Developing and Using Models
- Constructing Explanations and Designing Solutions

Unit 3 Essential Questions:

How do the factors such as weathering, climate, and time, affect soil formation?

How do the agents of erosions such as gravity, ice, wind, and water, change Earth's surface?

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Unit 3 Learning Targets

Students will be able to...

- develop a model in which they identify the relevant components, including: general types of Earth materials that can be found in different locations, including: those located at the surface and/or in the interior and those that exist (ed) before and /or after chemical and/or physical changes that occur during Earth processes
- use the model to describe relationships between components, including different Earth processes which drive matter cycling through observable chemical and physical changes, the movement of energy that originates from the Earth's hot interior, energy flows from the sun, and the temporal and spatial scales over which the relevant Earth processes operate
- use their model to describe and account for the interactions that energy from the Earth's interior and the sun drive Earth processes that together cause matter cycling through different forms of Earth materials

Unit 3 Learning Targets

Students will do...

- read for content mastery
- develop and use content related vocabulary
- cite specific textual evidence to support analysis of science and technical texts
- complete a variety of laboratory activities to support the content
- write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content
- view various content related videos
- model the soil erosion caused by running water
- model chemical weathering to discover the effect of acids on certain types of rocks
- use a classification key to determine the texture of a soil sample
- make a model of one of the various types of mass movement

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Unit 3 - Evidence of Learning

Formative Assessments:

- Glencoe Level Red Chapter 11 Sections 1&2 Entry-Level Assessments: Target Your Reading – (TB anticipation guide)
- Glencoe Level Red Textbook CH 11 Sections 1&2 Reading Checks and Section Reviews
- Lab work
- Homework
- Brain POP quizzes
- Various content related models

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Summative Assessments:

- Glencoe Level Red Chapter 11 assessments
- Glencoe Level Red Chapter 11 Section quizzes
- Lab assignments
- Unit project

Lab Activities:

- Glencoe Level Red CH 11 Launch Lab: Water's Force
- Glencoe Level Red CH 11 Virtual Lab: How are Earth materials broken down?
- Glencoe Level Red CH 11 Video Lab: Classifying Soils
- Glencoe Level Red CH11 Section 1 Mini Lab: Dissolving Rock with Acids
- Glencoe Level Red CH 11 Section 1 Mini Lab: Analyzing Soils
- Glencoe Level Red CH 11 Section 1 Lab: Classifying Soils
- Section 2: Model types of Mass Movement (see teacher binder)
- Glencoe Level Red CH 11 Section 2: Model Glacial Erosion
- Glencoe Level Red CH 11 Section 2 Design Your Own Lab: Measuring Soil Erosion

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Unit 3 - Materials/Equipment:

Required Lab Materials:

safety glasses, bread pans, sand, washtub, brick or wood block, chalk, vinegar, soil samples, newspaper, stereomicroscopes, clay, pebbles, potting soil, plastic bins, gravel, ice cube trays, paint trays, soil, grass sod, 1,000mL beaker, triple-beam balance

Materials/Equipment/Resources:

Brain POP subscription, Quizlet subscription, Teachers Domain videos, Glencoe Level Red series components, student chromebooks, Smart Board, Earth Science foldables: The Rock Cycle p.18; Weathering p. 19; Types of Erosion p. 25-26; Researching Erosion Reduction p. 22