

Enhancement Activities/Strategies for Gifted/High Ability Learners: Sample Science Learning Plan

Big Idea/ Topic

- Earth and Changes Over Time – Erosion and Weathering

Standard Alignment

S5E1. Obtain, evaluate, and communicate information to identify surface features on Earth caused by constructive and/or destructive process.

- Construct an argument supported by scientific evidence to identify surface features as being caused by constructive and/or destructive processes.
- Develop simple interactive models to collect data that illustrate how changes in surface features are/were caused by constructive and/or destructive processes.
- Ask questions to obtain information on how technology is used to limit and/or predict the impact of constructive and destructive processes. (Clarification statement: Examples include seismological studies, flood forecasting (GIS maps), engineering/construction methods and materials, and infrared/satellite imagery.)

Crosscutting Concepts: Cause and Effect

Connections to Other Content Areas:

ELAGSE5W2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

- Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
- Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
- Link ideas within and across categories of information using words, phrases, and clauses (e.g., in contrast, especially).
- Use precise language and domain-specific vocabulary to inform about or explain the topic. e. Provide a concluding statement or section related to the information or explanation presented.

ELAGSE5W8: Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.

ELAGSE5W9: Draw evidence from literary or informational texts to support analysis, reflection, and research.

Advanced Research

Challenge your students to work in pairs to create a “[National Park Geologic Tour](#)” using the US [National Park Service](#)’s website and the American Geosciences Institute’s [Image Bank](#) website to create a slideshow presentation that will depict the geological features of a national park (as a result of weathering and erosion). Lesson from [EarthScienceWeek.org](#).

Communication

[Breakout EDU](#) (You can sign up for a free game if you don’t have an account) [Beach Weather](#). Digital Breakout games are an easy way to challenge students to collaborate, use critical thinking, and communication to “breakout” (like an escape room concept, but everything is digital). This game requires children to apply their understanding of **erosion**. If this is your students’ first experience with a Breakout Challenge, you may need to be prepared to give hints to help guide students. I find the best hints are questions to make them think more. Allow the students time to struggle before providing a hint. I encourage students to use the back of their recording sheet to write down solutions they try. Oftentimes, they will figure out the answer by working through what does not work. (*Handout on p. 4*)

Critical Thinking and Critical Problem-Solving Skills

Locate a spot around your home or on the school grounds where erosion is causing a problem. Is it on the playground or around the downspouts at your house? Research possible solutions and propose a way to fix the problem. Is wind or water the cause of the problem? Can you change the way wind or water create or add to the problem? Would a physical barrier help...or would it amplify the problem? Would it help to add a second ground water to travel to reduce the flooding in an area? Record your research on a graphic organizer or use Cornell notes.

Creative Thinking and Creative Problem-Solving Skills

Play the game [Tapple](#) using the topic constructive and destructive processes. The basic premise is an alphabet wheel. Students take turns naming vocabulary, examples, events, etc. related to constructive and destructive processes. If you don’t have the game, you could play using a timer and alphabet cards.

Awareness of Self—Student’s Well-being

Use your knowledge of weathering and erosion to identify a space near your home or school with an erosion challenge. Record your observations every day for a month. Notice any changes due to weather and wind. Investigate possible solutions. Share your findings with partners or the class.

Digital Breakout EDU Challenge Recording Sheet: Beach Weather





My Name _____

Names of the Students in My Group: _____



Sam, Edith, and Victoria are heading to the beach. No matter what, they tend to learn all about the effects of wind and water on the earth when they are at the beach. Good thing they love to learn!

Record the Correct Lock Combination for Each Lock

Lock		Correct Combination				
	Color Lock					
	Shape Lock					
	Word Lock					
	Color Lock					

What do you think glaciers have to do with weathering and erosion?

What is the difference between weathering and erosion?

Did you learn something new that can cause erosion?