

<p>Essential Question: How did the Grand Canyon’s features form?</p> <p>Focus Question: How are Earth’s rock layers uncovered?</p> <p>Phenomenon Question: What causes rock to break?</p>		
<p>Objective: Explain how natural materials weather rock.</p>	<p>Materials: Pencil</p>	<p>Projected Slides: 73-84</p>

Share the following items with families in advance of the lesson.

- Links: Lesson 7 Daily Video, Science Journal Lesson 7
- Materials list
- Assignment: After watching the video, students summarize what they learned about weathering in this lesson, draw a model of and provide an explanation of how weathering might have caused the holes and cracks in the rock around Deer Creek Falls, and respond to this prompt: What questions do you have now about weathering or weathered rock? How can these questions guide what we study next?

Remote Learning Recommendations

Type	Pacing	Activity	Notes
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Hybrid (in-class synchronous and remote asynchronous)</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Asynchronous (in Sync)</p>	10–15 minutes	Daily Video	<p>Video description:</p> <p>Students use knowledge about how forces are caused by objects in contact with each other as they construct explanations of their observations to determine that weathering is a process in which forces exerted by various natural materials cause rock to break.</p>
	10 minutes	Assignment	<p>The video asks students to summarize what they learned about weathering in this lesson, draw a model of and provide an explanation of how weathering might have caused the holes and cracks in the rock around Deer Creek Falls, and respond to this prompt: What questions do you have now about weathering or weathered rock? How can these questions guide what we study next?</p>
	15 minutes	<p>Virtual Class Meeting (Optional):</p> <p>Science Discourse</p>	<p>Ideally this meeting is held after students watch the video and complete the assignment:</p> <ul style="list-style-type: none"> • Facilitate a discussion about the Science Journal Task. Update the class anchor chart incorporating students’ new ideas about weathering. Send chart to all students. • Review Key Term: weathering • <i>Model Weathering Remote Alternative</i> <p>Facilitate a discussion about the photograph of Deer Creek Falls (Lesson 1 Resource D). Review the previously identified holes and cracks in the rock. Using student input, create a class model that shows how weathering might have caused the holes and cracks in the rock, identifying at least two different natural materials that exerted forces on rock.</p> <p>Some students may not believe natural materials can break rock on a large scale. Take a walk around the school grounds or view</p>

PhD Science in Sync™ Learn Anywhere Plan

Synchronous			photographs to observe examples of where weathering has occurred. Ensure that students use evidence from their investigations to help guide development of their understanding of the interactions between materials (cause) and how those interactions change the rock (effect).
	5 minutes	Launch	Refer to Teacher Edition to conduct lesson Launch (Projected slides 73-74). Give all students a chance to participate either in-person or virtually.
	35 minutes	Learn	Refer to Teacher Edition to conduct lesson Learn (Projected slides 75-82). <ul style="list-style-type: none"> • Analyze Observations • Explain Weathering <ul style="list-style-type: none"> ○ Introduce Key Term: weathering ○ Update the class anchor chart incorporating students' new ideas about weathering. Send chart to all students. • Model Weathering <p>Give all students a chance to participate either in-person or virtually</p>
	5 minutes	Land	Refer to Teacher Edition to conduct lesson Land (Projected slides 83-84). Give all students a chance to participate either in-person or virtually.
Additional Instruction		Extension (Optional)	Understanding the phrase natural material is required to participate fully in the activity. Introduce this term explicitly. Sharing the Spanish cognates for natural (natural) and material (material) may be useful. Additionally, consider sharing a student-friendly explanation such as "Natural materials are materials found in nature and are not made by people."

Asynchronous
Remote students using in Sync with optional virtual class meeting

Synchronous
Some students in-class and some remote, but all participating live

Hybrid
In-class students are synchronous and remote students asynchronous