## Earth Systems Curriculum Pacing Guide

### Surface Processes on Earth

**Cross-cutting Concepts:** Patterns; Cause and Effect; Systems and System Models; Stability and Change  
**Topics:** Weathering; Mass Movements; Surface Water Movement; Groundwater supply, movement, and storage mechanisms  
**Estimated Time:** 4 weeks

<table>
<thead>
<tr>
<th>Anchoring Phenomenon</th>
<th>Standard</th>
<th>Instructional Segment</th>
<th>Disciplinary Core Ideas</th>
<th>Science and Engineering Practices</th>
<th>Instructional Notes</th>
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| Flash Flooding       | SES3. a,b,c,d SES1. b | Predicting and Mapping Flooding | Frameworks of K-12 Science Education:  
*By the end of 12th grade*  
**ESS2.C: THE ROLES OF WATER IN EARTH’S SURFACE PROCESSES**  
- The abundance of liquid water on Earth’s surface and its unique combination of physical and chemical properties are central to the planet’s dynamics. These properties include water’s exceptional capacity to absorb, store, and release large amounts of energy; transmit sunlight; expand upon freezing; dissolve and transport materials; and lower the viscosities and melting points of rocks.  
- Asking questions and defining problems.  
- Developing and using models  
- Planning and carrying out investigations  
- Analyzing and interpreting data  
- Using mathematics and computational thinking  
- Constructing explanations (for science) and designing solutions (for engineering)  
- Engaging in argument from evidence  
- Obtaining. | By the end of this unit, students are using the following language in their speaking and writing during EXPLAIN or ELABORATE. Landscape, physical and chemical weathering, mass wasting, geologic hazards, surface water, groundwater, agents of erosion, deposition, sediment, flood and flood plains. |
Images and information will be your local emergency management agency, local meteorologists, local media on social media. Just watch and make sure the images are from the current storm and not recycled from a prior storm.

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<th>movement, and storage mechanisms</th>
<th>Evaluating, and communicating information</th>
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<td>Including weathering and deposition processes</td>
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This instructional segment will connect to the Geologic Processes unit.