


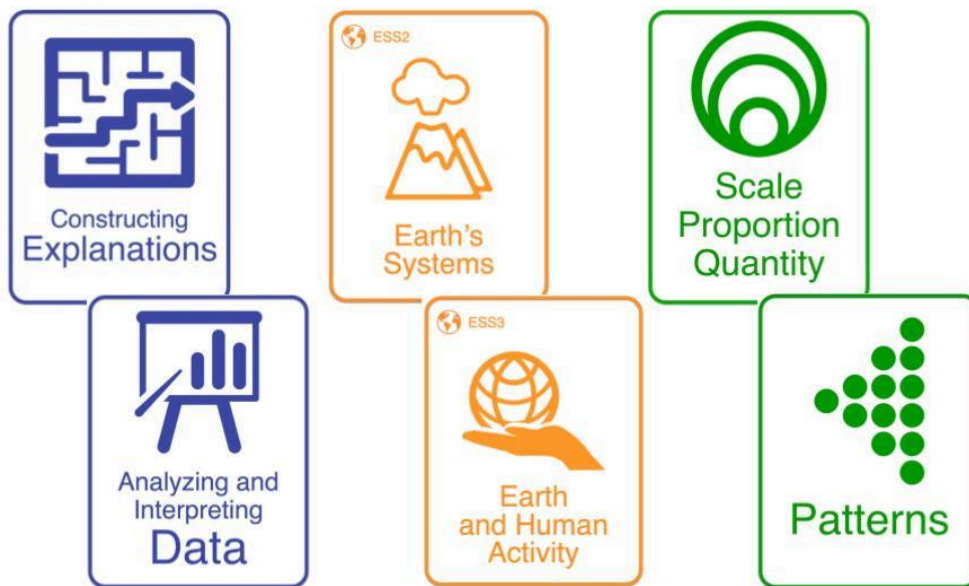
Storyline Unit Design

Understanding by Design (UbD) Template*

Unit		Course(s)	
Designed by		Time Frame	
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Anchor Model

Earth's Systems



Stage 1: Desired Results

Performance Expectations

MS-ESS2-1: Cycling of Earth's Materials

Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. (Stability and Change)

MS-ESS3-1: Uneven Distribution of Earth's Resources

Construct a scientific explanation based on evidence for how the uneven distributions of earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. (Cause and Effect)

Anchoring Phenomenon

[Anchoring Phenomenon Worksheet](#)

Enduring Understandings

Essential Questions

Stage 2: Assessments

MS-ESS2-1 - [Manupuner Rock Formations \(Edited\)](#)





MS-ESS3-1 - [Copper, the Poor Man's Gold](#)

[Assessment Screening Tool Slides](#)

Backward Design Elements

What new skills (practices) will students need to learn?	What thinking concepts will students need to learn?	What science concepts will students need to learn?
Energy Flow Atomic arrangement Material Change Looking for Patterns Interpreting Maps, Graphs, Tables	Develop a model Cause & Effect Compare & Contrast Cause & Effect	Rock Cycle Weather & Erosion Internal & External Processes Distribution of Earth's Resources Internal Earth Processes Mineral Resources

Stage 3: Learning Plan

 Phenomenon or Problem	 Learning Performance - What will they do? The three dimensions woven together into a single learning performance.	 Why is this important? How does this activity help build understanding of the anchoring phenomenon.	 Learning Experience - How will they do it? Graphic organizers, protocols, scaffolds, labs, mini-lesson, student discourse, etc.
Elephant Rocks State Park	Students will recognize the patterns that formed Elephant Rocks State Park . They will ask questions, develop and use models, and construct explanations .		
Formative Assessment - What information are you collecting to know that they met the target?			
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Summative Assessment What information are you collecting to know that they met the target?			
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Summative Assessment What information are you collecting to know that they met the target?			

Materials / Resources

Vocabulary

MS-ESS2-1

Earth's materials (i.e. minerals and rocks)
 Earth processes (energy from Earth's interior)
 - Melting
 - Crystallization
 - Deformation
 Earth processes (energy from the sun)
 - Weathering
 - Erosion
 - Sedimentation
 Stability and Change

MS-ESS3-1

Uneven distribution of Earth's resources
 Mineral resources (e.g. metal ores, soils)
 Energy resources (e.g. petroleum)
 Groundwater resources
 Non-renewable resources
 Geoscience processes (e.g. volcanic activity, sedimentary processes)
 Cause and Effect

Mini Lessons

Causation Level 4 - [Causation Level 4 - Cause, Mechanism & Effect Mini-Lesson](#)
 Causation Level 4 Thinking Slides - [Causation Level 4 - Cause, Mechanism & Effect Thinking Slides](#)

Graphic Organizers

[Phenomena Observation Graphic Organizer](#)
[Questioning Graphic Organizer](#)
[Modeling Graphic Organizer](#)
[Planning an Investigation Organizer - Experimental](#)
[Planning an Investigation Organizer - Observational](#)
[Investigation Evidence Organizer](#)
[Engaging in Argumentation Organizer](#)

Differentiation / Modifications