

## CCPS Science Unit Plan

<b>Grade</b>	6	<b>Subject</b>	Science	<b>Unit #</b>	2
<b>Unit Name</b>	Life as an Archeologist		<b>Timeline</b>	5 Weeks	
<b>How to use the Framework</b>	<p style="color: red;">This Framework should be used to implement daily science instruction. The resources and instructional strategies reflected in the Framework will provide a foundation for effective implementation and student mastery of standards. Please see the hyperlinked <a href="#">abbreviation document</a> to ensure understanding of all abbreviations used with this framework.</p>				
<b>Unit Overview</b>	<p>In this unit, students will investigate the characteristics of minerals and how minerals contribute to rock composition. Students will be able to classify rocks by their formation process and how they transform through the geologic processes of the rock cycle. Students will understand the processes of weathering and erosion and be able to identify and describe environments of deposition. Students will construct an explanation of how weathering, erosion, and deposition processes change the Earth's surface. Students will plan and carry out an investigation to determine the composition of soil. The physical science element related to physical and chemical properties has been integrated into the unit. A concept from physical science is introduced in this unit that will be taught explicitly in 6th grade. When studying minerals, rocks, and weathering, students will also look at substances' physical and chemical properties.</p>				
<b>3Dimensional Instruction</b>	<u>GSE</u>		<u>Science and Engineering Practices</u>	<u>Crosscutting Concepts</u>	
	<p>S6E5. Obtain, evaluate, and communicate information to show how Earth's surface is formed.</p> <p style="background-color: yellow;">Elements a. - h. are found under the week's lesson.</p>		<ul style="list-style-type: none"> <li>● Obtaining, evaluating, and communicating information</li> <li>● Developing and using models</li> <li>● Constructing explanations and designing solutions</li> <li>● Asking questions</li> <li>● Planning and carrying out investigations</li> <li>● Analyzing and Interpreting Data</li> </ul>	<ul style="list-style-type: none"> <li>● Patterns</li> <li>● Scale, Proportion and Quantity</li> <li>● Systems and System Models</li> <li>● Cause and Effect</li> <li>● Energy and Matter</li> <li>● Structure and Function</li> <li>● Stability and Change</li> </ul>	
<b>NGSS Alignment</b>	<p><a href="#">NGSS Alignment to Disciplinary Core Ideas</a></p>				
<p><b>Weekly Lesson Tasks</b></p> <p style="color: white;"><a href="#">Teacher Notes</a></p>					
<p><b>Week 1</b></p>					

<b>GSE:</b> <b>S6E5.b.</b> Plan and carry out an investigation of the characteristics of minerals and how minerals contribute to rock composition.	<b>Focused Concept:</b> Minerals are naturally occurring, inorganic solids with a definite chemical composition and crystalline structure. They are categorized by physical characteristics, including color, luster, streak, crystal form, hardness, cleavage and fracture, and density.				
<b>SEP:</b> Planning and Carrying out investigations	<b>CCC:</b> Patterns; Cause and Effect; Stability and Change				
<b>Phenomenon:</b>  TTW: Allow students time to explore the links above. Use the See-Think-Wonder protocol to guide student thinking. <ul style="list-style-type: none"> <li>After students share their initial ideas and questions, guide them through these questions.</li> </ul> Questions for Discussion: <ul style="list-style-type: none"> <li>What is making these minerals valuable?</li> <li>These are all examples of minerals. Based on your observations, how are they different from rocks?</li> </ul>			<b>DQ:</b>  What makes these minerals valuable?  What is a mineral?		
<b>Learning Targets:</b>  <b>The Students Will Be Able To (SWBAT)</b>	<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>	<b>Day 5</b>
	<b>SWBAT</b> describe the characteristics of minerals.	<b>SWBAT</b> identify minerals based on their characteristics and/or properties	<b>SWBAT</b> identify minerals based on their characteristics and/or properties  <b>SWBAT</b> plan and investigate to identify minerals based on their characteristics.	<b>SWBAT</b> identify minerals based on their characteristics and/or properties	<b>SWBAT</b> explain how minerals contribute to rock composition.
<b>Opening</b>  <b>The Teacher Will (TTW)</b>  <b>Student Will (SW)</b>  <b>See-Think-Wonder Protocol (STW)</b>	<b>Phenomenon:</b> Pricey Minerals - <a href="#">Red Diamonds</a>  <b>DQ:</b> What is making these minerals valuable?  These are all examples of minerals. Based on your observations, how are they different from rocks?	<b>Phenomenon:</b> Pricey Minerals - <a href="#">Red Diamonds</a>  DQ: What is a mineral?  <b>TTW</b> review mineral properties from the previous lesson.	<b>Phenomenon:</b> <a href="#">Glowing Rocks</a>  <b>TTW</b> show students the rocks under regular lighting. Then turn off all of the lights and make sure that all of the windows are covered. Then turn on the black light and show students how the rocks glow.	<b>Phenomenon:</b> <a href="#">Glowing Rocks</a>  <b>TTW</b> recap the previous day's lesson on minerals and their characteristics.  <b>TTW</b> open the lesson with a prompt:  List the main properties that are used to classify minerals.	<b>Phenomenon:</b> <a href="#">Glowing Rocks</a>  <b>TTW</b> open the lesson with a prompt:  How are minerals different from rocks?  <b>TTW and SW</b> have a class discussion

	<p><b>TTW</b> allow students time to explore the links above. Use the <a href="#">See-Think- Wonder</a> protocol to guide student thinking.</p> <ul style="list-style-type: none"> <li>• After students share their initial ideas and questions, guide them through these questions.</li> </ul> <p>Questions for Discussion:</p> <ul style="list-style-type: none"> <li>○ What is making these minerals valuable?</li> <li>○ These are all examples of minerals. Based on your observations, how are they different from rocks?</li> </ul>	<p><b>TTW</b> display Mineral Identification Prior Knowledge to assess student knowledge before introducing the Gizmo activity.</p> <p><a href="#">Student Handout</a> <a href="#">Teacher Guide</a></p>	<p><b>SW</b> share thoughts and observations in a Parking lot.</p> <p><b>TTW</b> ask students for their explanation of why this occurs.</p> <p><b>SW</b> discuss how rocks are made of minerals and the properties of minerals.</p>		<p><b>SW</b> write an informative speech describing the physical properties of building materials used in skyscrapers.</p> <p>DQ: What is the best material to build a skyscraper?</p> <p>Communicate Science - Informative Speech <a href="#">Student Handout</a></p>
<p><b>Guided Practice/ Transition</b></p>	<p><b>TTW</b> display the <a href="#">Minerals &amp; Rocks</a> PPT and allow students to complete guided notes.</p> <p>Student Handout: <a href="#">Minerals &amp; Rocks Graphic Organizer</a></p>	<p><b>TTW</b> assign students to computers and passes out a Mineral Key to each student. Students can work individually or in small groups.</p> <p><b>SW</b> work through the activities in the Student Exploration using the Gizmo and the Mineral Key.</p> <p>Modification: Teachers can use a projector and do the Exploration as a teacher-led activity.</p>	<p><b>SW</b> observe how vinegar reacts to the calcium carbonate, an important mineral, in sedimentary rock.</p> <p><a href="#">Observing Mineral and Vinegar LAB</a></p>	<p><b>TTW</b> introduces “The Sum is Greater” handout/strategy. Divide students into groups</p> <p>STEMSCOPE Reading Science-Digging for Diamonds</p> <p><a href="#">Student Handout</a></p>	<p><b>Common Assessment 3</b></p>

## Independent Practice

Observing Mineral and Vinegar

**TTW** give each group a paper plate with chalk, a seashell, and a piece of limestone- provide students with an eye dropper and a small beaker filled with 5 mL of vinegar.

**SW** observe that vinegar reacts to calcium carbonate, an important mineral, in sedimentary rock.

**SW** take turns applying the vinegar to the chalk, seashell, and limestone.

[Student Handout](#)

### Teacher Choice Activity:

[Rocks and Minerals Reading Passages & Questions Handouts](#)

### Vocabulary Terms Chart

Provide students with the [graphic organizer \(editable\)](#) or [pdf handout](#), explaining its sections: word, *What did it look like in the investigation?* Meaning, image/drawing, and connection.

**SW** observe, measure, and identify 26 mineral samples. Completing Activity A and Activity B.

**Activity A** – Students record data about a single mineral sample and use a key to identify the sample.

**Activity B** – Students apply their learning to identify additional mineral samples.

## Mineral Identification and Explaining Mineral Properties Lab

Part 1: Characteristics of Minerals

**SW** sort and classify minerals, then learn concepts that allow them to explain why each type of mineral has its own set of unique properties.

 Copy of How Do W...

Part 2: Identifying minerals based on their properties. Explaining differences in mineral properties.

**SW** classify minerals, and then learn concepts that allow them to explain why each type of mineral has its own set of unique properties.

**SW** complete the Mystery Mineral Identification Lab virtual investigation to identify minerals by observing and testing their physical and chemical properties.

**SW** gather data for the unknown mineral, use an identification chart to determine the identity of each mineral. Finally, write an evidence based claim about the identity of mineral #5.

[Mystery Mineral Identification Lab Link](#)

**SW** complete a Mineral Investigation Report:

**TTW** assign students to choose a mineral and research its properties, uses, and importance.

**SW** present their findings in a report or presentation to the class.

[Mineral Investigation Report Rubric](#)

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words. The teacher should provide the meaning of the word to the students and ask students to provide examples of how the word was represented during the investigation, phenomenon and/or inquiry activity. In the connection column, students should write how the word connects to concepts or observations they gathered during their classroom tasks. Allow students to work in collaborative groups. Actively monitor and facilitate small group discussions and review various artifacts (pictures, images, primary sources, charts) to build knowledge of the term.

**Assessment Summary**

**TOD:** *Reflection*  
Summarize the key points of the lesson, emphasizing characteristics of a mineral.

Suggestion:  
List 3 characteristics of minerals.

**TOD:** Completes the 5 questions assessment.

**TTW** will review and discuss the Mineral Identification Gizmo Responses.

**TOD:** *Reflection*  
Summarizes the key points covered in the lesson.

**TTW** asks students to share one interesting fact they learned about minerals today.

**TOD:** Summative Assessment-  
Administer a written assessment.

Describe a step-by-step procedure you would follow to identify the minerals present in a rock sample. What tools and techniques would you use?

**TOD:** *Writing Prompt*  
Identify three physical properties of minerals that are critical for their identification. For each property, describe a method for testing it.

**TTW** evaluate students' understanding of mineral identification and accuracy in their reports.

			Evaluate student understanding through their participation in group discussions, completion of the mineral identification chart, and the written reflection at the end of the lesson.	<p><b>TTW</b> evaluates students' understanding through their participation in group discussions, completion of the mineral identification chart, and written reflection at the end of the lesson.</p> <p><b>Summative Assessment:</b> Administer a written assessment that includes questions about mineral identification and mineral characteristics.</p>	Peer Evaluation Students peer-review each other's research projects based on criteria such as accuracy, completeness, and presentation.
<b>Small Group Tasks (TBA)</b>					

**Week 2**

**GSE:**  
**S6E5.b.** Plan and carry out an investigation of the characteristics of minerals and how minerals contribute to rock composition.

**Focused Concept:**

Explore the physical and chemical characteristics of minerals and understand how these minerals contribute to the formation and classification of different types of rocks. Minerals combine to form rocks. Rocks are a grouping of one or more minerals as seen in granite, sandstone, limestone, etc. The different groupings of minerals form the different types of rocks, which are divided into three larger categories of igneous rock, sedimentary rock, and metamorphic rock.

Cementation	compaction	Deposition	Erosion	Extrusive
Foliated	Igneous	Intrusive	Metamorphic	Non- foliated
Rock	Rock Cycle	Sedimentary		

*The teacher will access **Module: Dynamic Earth - Lesson 5: The Cycling of Earth's Material** for online instruction and assign activities used for the instructional week.*

**SEP: Planning and Carrying out investigations**

**CCC: Patterns; Cause and Effect; Stability and Change**

**Phenomenon:**

How can this lava, originating deep below Earth as magma, eventually become sandstone?

**DQ:**

How do igneous rocks form?  
How do sedimentary rocks form from layers of sediment?  
How do metamorphic rocks form?  
How do rocks change?

**Day 6**


**Day 7**

**Day 8**

**Day 9**

**Day 10**

<p><b>Learning Target: The Student Will Be Able To (SWBAT)</b></p>	<p><b>SWBAT</b> construct an explanation to describe how rocks are composed of minerals.</p>	<p><b>SWBAT</b> -Identify igneous, sedimentary, and metamorphic rocks.  -Describe the processes that form igneous, sedimentary, and metamorphic rocks.</p>	<p><b>SWBAT</b> -Identify igneous, sedimentary, and metamorphic rocks. -Describe the processes that form igneous, sedimentary, and metamorphic rocks.</p>	<p><b>SWBAT</b> construct an explanation of how to classify rocks by their formation.</p>	<p><b>SWBAT</b> construct an explanation of how to classify rocks by their formation and how rocks change through geologic processes in the rock cycle</p>
<p><b>Opening</b></p>	<p>(* Located in textbook) <b>Science Probe: What is a rock?</b></p> <p><b>TTW</b> use this science probe to assess students' prior knowledge of the lesson content and to identify possible preconceptions.</p> <p><b>Engage: Encounter the Phenomenon</b> <u>Phenomenon:</u> <u>How can this lava, which originated deep below Earth as magma, eventually become sandstone?</u></p> <p>Go Online - Watch <i>Cooling Lava</i> to see the phenomenon in Action. (Individually or play the video as a whole class).</p> <p><b>SW</b> records their thoughts on why the phenomenon occurs.</p>	<p>DQ: How do igneous rocks form?</p> <p><b>TTW</b> asks students What is the most abundant type of rock on Earth and where does it form?</p> <p>Think-Pair-Share</p>	<p>DQ: How do sedimentary rocks form from layers of sediment?</p> <p><b>TTW</b> asks students how sedimentary rocks form.</p>	<p>DQ: How do metamorphic rocks form?</p> <p><b>TTW</b> asks students What do you think might be the main factors that form metamorphic rock?</p>	<p>(* Located in textbook) <b>Revisit Science Probe: What is a rock?</b></p> <p>Topics: Formation Igneous Rock Formation Sedimentary Rock Formation Metamorphic Rock</p> <p><b>TTW</b> asks students How do you think all rock-forming processes are connected?</p> <p><b>Explore and Explain</b> <b>SW</b> Go Online Interactive Presentation</p> <p><b>Investigation: Rock Cycle</b></p> <p><b>SW</b> describe the processes involved in the formation of igneous, sedimentary, and metamorphic rock.</p> <p><b>TTW</b> asks students What drives the rock cycle?</p>

<p><b>Guided Practice/Transition</b></p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW complete Go Online Interactive Presentation</p> <p><b>CER: Explain the Phenomenon: The Cycling of Earth's Material</b></p> <p>SW reflect and brainstorm to complete the "Claim" section of the CER-</p> <p>TTW will provide students with Sentence Starters.</p> <p><b>Read About:</b></p> <ol style="list-style-type: none"> <li>1. What is a rock?</li> </ol> <p>TTW assign a <i>Foldable</i> activity to allow students to take notes throughout the lesson.</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online Interactive Presentation</p> <p><b>Investigation: Sugar Rocks</b></p> <p>TTW model the formation of igneous rocks and promote student discourse/class discussions about the changes observed.</p> <p>SW use the model to describe how igneous rocks form.</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online Interactive Presentation</p> <p><b>Investigation: Stick to It</b></p> <p>TTW will model the formation of sedimentary rocks.</p> <p>SW observe the formation of sedimentary rocks to understand the process of sedimentation and cementation.</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online Interactive Presentation</p> <p><b>Lab: Metamorphic Sandwich</b></p> <p>SW model the formation of metamorphic rocks.</p> <p><i>Teacher can show a lab video of Metamorphic Sandwich</i></p>	<p>TTW Review Game: Quiz Show  Divide the class into small teams.</p> <p>Prepare a set of quiz questions related to Igneous, Metamorphic, and Sedimentary Rock - Rock cycle.</p> <p>Set a timer for each question and award points to teams for correct answers.</p> <p>Encourage friendly competition and active participation.</p>
<p><b>Independent Practice</b></p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online Interactive Presentation</p> <p><b>Lab: Rock Detail</b></p> <p><i>Teacher can show a lab video of Rock Details.</i></p> <p>SW examine a variety of rock samples and infer why they differ.</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online Interactive Presentation</p> <p><b>Read About:</b></p> <ol style="list-style-type: none"> <li>1. How do igneous rocks form?</li> <li>2. Where do igneous rocks form?</li> </ol> <p>SW complete GO Online (Interactive Presentation)</p> <p><b>3D Thinking</b>  How do igneous rocks form?</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online Interactive Presentation</p> <p><b>Read About:</b></p> <ol style="list-style-type: none"> <li>1. How do sedimentary rocks form from layers of sediments?</li> <li>2. What are the different types of sedimentary rocks?</li> </ol> <p>SW complete GO Online (Interactive Presentation)</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online Interactive Presentation</p> <p><b>Read About:</b></p> <ol style="list-style-type: none"> <li>1. How do metamorphic rocks form? Metamorphic</li> <li>2. Uplift</li> <li>3. How do rocks change?</li> </ol>	<p>SW Explore Modeling the Rock Cycle</p> <p>SW model the rock cycle using a crayon.</p> <p> Copy of Student Explore ...</p>



Where do igneous rock form?

**TTW** ask students to share their explanations.

### **3D Thinking**

How do sedimentary rocks form from layers of sediment?

**TTW** ask students to construct an explanation about change over time

#### **Teacher Choice Activity:**

Close Reading: Read a Scientific Text: Phosphates—Help or Hazard?

#### **Vocabulary Strategy Understanding**

**Vocabulary Strategy**  
Provide students with the [graphic organizer \(editable\)](#) or [pdf handout](#), explaining its sections: word, antonym, synonym, picture, *in my own words* (meaning), and sentence

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words. The teacher should provide and post the meaning of the word for students to refer to. Allow students to work in collaborative groups to discuss an antonym and a synonym. The group should draw or provide/insert an image of the word based on their understanding, write the provided meaning in their own words and write a sentence using the vocabulary word.

**SW** complete CER: Collect Evidence (C/D): The Cycling of Earth's Materials.

**SW** refer back to the CER graphic organizer and record their evidence (C/D).

**TTW** evaluate student responses for accuracy.

<p><b>Assessment/Summary</b></p>	<p><b>TOD:</b> Complete an Extension Activity from the Lab.</p> <p><b>SW</b> research the rocks they identified in the lab and explain how each rock formed and the similarities and differences among the rock types.</p>	<p>(* Located in textbook) <b>Explore and Explain</b> <b>TOD:</b> SW complete CER: Collect Evidence(A): The Cycling of Earth's Materials.</p> <p>How does lava flowing out of a volcano relate to the formation of igneous rock?</p> <p>SW refer back to the CER graphic organizer and record their evidence (A).</p> <p><b>TTW</b> evaluate student responses for accuracy.</p>	<p>(* Located in textbook) <b>Explore and Explain</b> <b>TOD:</b> SW complete CER: Collect Evidence (B): The Cycling of Earth's Materials.</p> <p><b>SW</b> refer back to the CER graphic organizer and record their evidence (B).</p> <p><b>TTW</b> evaluate student responses for accuracy.</p>	<p>(* Located in textbook) <b>Evaluate</b> <b>TOD:</b> CER: Revised Claim and Reasoning: The Cycling of Earth's Materials</p> <p><b>SW</b> completed the revised claim and reasoning.</p> <p><b>TTW</b> evaluate student responses for accuracy.</p>	<p><b>TOD:</b> SW complete the STW Protocol by answering and discussing the following questions:</p> <p>How do you think this relates to the characteristics of rocks we sorted?</p> <p>What questions do you still have about each observation?</p> <p><b>TTW</b> monitor students' participation and engagement during the activities.</p> <p>Review students' responses during the concept review activities and quiz shows to assess their understanding of the material.</p> <p>Provide feedback and clarification as needed to reinforce key concepts.</p>
<p><b>Small Group Tasks (TBA)</b></p>					

**GSE:**

**S6E5. d.** Ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition. (Clarification statement: Environments of deposition include deltas, barrier island, beaches, marshes, and rivers)

**Focused Concept:**

The types of weathering, agents of erosion and transportation, and environments of deposition, with a focus on understanding how these processes shape the Earth's surface. Understanding of the interconnected processes of weathering, erosion, transportation, and deposition and how they shape different environments on the Earth's surface.

Weathering Erosion Transpiration Environment Deposition Delta Barrier island

*The teacher will access **Module Dynamic—Lesson 4: Changing Earth's Surface for online instruction and assign activities for the instructional week.***

**SEP:** Asking Questions

**CCC:** Stability and Change; Energy and Matter; Cause and Effect

**Phenomenon:**

**How did the Grand Canyon get so deep?**

**Grand Canyon**

SW: Watch a video

[Grand Canyon link and video](#)

se the [See-Think-Wonder](#) protocol to guide student thinking

- After students share their initial ideas and questions, guide them toward these questions.
  - How was the Grand Canyon formed?
  - What patterns do you notice in the landform?
  - Describe what events could have caused these patterns.

**DQ:**

Which forces act on the stones to weather and erode them?  
Which forces act on the stones to deposit them in new locations?  
How was the Grand Canyon formed?

What patterns do you notice in the landform?

Describe what events could have caused these patterns.

What is the relationship between rock formation and the location it is found?

What factors affect the rate of weathering and erosion?

What geoscience processes change Earth's surface?

**Day 11**

**Day 12**

**Day 13**

**Day 14**

**Day 15**

**Learning Target:  
The Student Will Be Able  
To (SWBAT)**

**SWBAT** describe the processes of weathering, erosion, and deposition.

**SWBAT** differentiate between mechanical, chemical, and biological weathering.



**SWBAT** differentiate between mechanical, chemical, and biological weathering.

**SWBAT** describe the processes of weathering and its effects on the Earth's surface.

**SWBAT** describe the processes of weathering, erosion, and deposition.

<p><b>Opening</b></p>	<p>(* Located in textbook)  <b>Science Probe:</b>  <b>What is erosion?</b></p> <p>TTW use this science probe to assess students' prior knowledge of the lesson content and to identify possible preconceptions.</p> <p>Guiding Questions:  What changes did you observe in the video?</p> <p>What processes do you think shape Earth's surface?"</p>	<p>TTW open the lesson with a Phenomenon of Weathering.</p> <p>TTW revisit the Phenomenon of the Grand Canyon.</p> <p>SW watch a video <a href="#">Grand Canyon link and video</a></p> <p>TTW use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking</p> <ul style="list-style-type: none"> <li>● After students share their initial ideas and questions, guide them toward these questions. <ul style="list-style-type: none"> <li>○ How was the Grand Canyon formed?</li> <li>○ What patterns do you notice in the landform?</li> <li>○ Describe what events could have caused these patterns.</li> </ul> </li> </ul>	<p>TTW open the lesson with questions.  Start with: "Have you ever noticed how statues or buildings sometimes look worn down over time?"</p> <p>TTW have students research images of weathered statues/buildings. Discuss students' observations.</p> <p>TTW explain- Introduce the concept of weathering and differentiate between physical and chemical weathering. Focus on chemical weathering, explaining it involves chemical reactions that change the minerals in rocks.</p>	<p>TTW open the lesson by asking students to complete Weathering Gizmo: Prior Knowledge Questions.</p> <p>SW discuss their response as a class,</p>	<p>TTW revisit the Grand Canyon Phenomenon.</p> <p>Before the investigation- TTW ask students to review kinds of weathering with a partner.</p>
<p><b>Guided Practice/Transition</b></p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW complete Go Online- Interactive Presentation</p> <p><b>CER: Explain the Phenomenon:</b>  <b>Changing Earth's Surface Phenomenon: How did the Grand Canyon get so deep?</b></p>	<p>TTW review weathering agents.</p> <p>Physical and Chemical Weathering</p> <p>TTW show the video <a href="#">Weathering and Erosion video Study Jam</a></p> <p>SW discuss the video and answer the questions for the video.</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW complete Go Online Interactive Presentation</p> <p><b>Read About:</b></p> <ol style="list-style-type: none"> <li>1. What processes change Earth's surface- Weathering</li> </ol> <p>TTW provide students with direct instruction.</p>	<p>TTW review with students weathering agents.</p> <p>TTW TOOL TALK for the <i>Weathering Gizmo</i>.</p> <p>TTW demonstrate how to navigate the <i>Weathering Gizmo</i> Warm-up.</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW complete Go Online Interactive Presentation</p> <p><b>Investigation: Bye-Bye Beach</b></p> <p>SW observe and explain how erosion and deposition change a beach.</p>

	<p><b>SW</b> watch the video Changing Landscapes to see this phenomenon in action.</p> <p><b>TTW</b> introduce weathering agents.</p> <p><b>TTW</b> model Metacognitive Strategy Thinking Aloud</p> <p><b>TTW</b> model how to ASK questions and explicitly explain the thinking process.</p> <p>Provide students with scenarios of different weathering agents on how they change the surface of the Earth.</p>	<p><b>Physical and Chemic...</b></p> <p><b>TTW</b> use the video sheet with questions to assess students' understanding of physical and chemical weathering.</p> <p><b>Physical and Chemic...</b></p> <p><b>TTW</b> explain ToolTalks.</p> <p>Physical Weathering Lab: Sugar cubes and pebbles</p>	<p>Chemical Weathering: Explain it happens when rocks react with water, air, or other chemicals.</p> <p><b>TTW</b> explain and introduce Lab Safety and Steps of the Chemical Weathering lab. (Instructions can be found below).</p> <p><b>SW</b> complete the lab and record their observations.</p> <p><b>Chemical Weathering...</b></p> <p>Teacher option: Full lab or use sections of the lab</p>		
<p><b>Independent Practice</b></p>	<p>(* Located in textbook) <b>Explore and Explain</b> <b>SW</b> Go Online Interactive Presentation</p> <p><b>Lab:Breaking Rocks</b></p> <p>SW model one form of physical weathering.</p> <p><i>Teacher can show a lab video of Breaking Rocks.</i></p> <p><b>TTW</b> circulate around the room to observe students' progress and provide individual assistance as needed.If appropriate,</p>	<p>(* Located in textbook) <b>Explore and Explain</b> <b>SW</b> GO ONLINE Interactive Presentation</p> <p><b>Read About:</b></p> <ol style="list-style-type: none"> <li>1. What processes change Earth's surface over time? Weathering</li> <li>2. What processes change Earth's...Physical Science Connection</li> </ol> <p><b>TTW</b> assign a <i>Foldable</i> activity to take notes.</p>	<p><b>Vocabulary Strategy: Vocabulary Terms Chart</b> Provide students with the <a href="#">graphic organizer (editable)</a> or <a href="#">pdf handout</a>, explaining its sections: word, <i>What did it look like in the investigation?</i>, meaning, image/drawing, connection.</p> <p>Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words</p>	<p><b>SW</b> complete the Weathering Gizmo.</p> <p>SW complete Part A and Part B.</p> <p><b>TTW</b> monitor and facilitate the Gizmo.</p> <p>Student Handout Teacher Guide</p>	

	<p>pause the independent work briefly to address common questions or misconceptions noticed while circulating.</p> <p>Allow students to quietly discuss the material with a partner if they're stuck, promoting collaborative learning.</p> <p><b>Study Tool:</b> Reading Essestional: Changing Earth's Surface.</p>		<p>. The teacher should provide the meaning of the word to the students and ask students to provide examples of how the word was represented during the investigation, phenomenon and/or inquiry activity. In the connection column, students should write how the word connects to concepts or observations they gathered during their classroom tasks.</p> <p>Allow students to work in collaborative groups. Actively monitor and facilitate small group discussions and review various artifacts (pictures, images, primary sources, charts) to build knowledge of the term.</p>		<p>(* Located in textbook)  <b>Explore and Explain</b>  <b>SW</b> complete Go Online Interactive Presentation</p> <p><b>Read About:</b></p> <ol style="list-style-type: none"> <li>1. What processes change Earth's surface over time?  Erosion and Deposition</li> </ol> <p><b>TTW</b> assign a <i>Foldable</i> activity to take notes.</p>
<p><b>Assessment/Summary</b></p>	<p><b>TOD:</b> What processes change Earth's surface over time?</p> <p><b>SW</b> ask their own three questions about physical weathering processes.</p> <p><b>TTW</b> review using this video.   What is Weathering? ...</p> <p><b>TTW</b> use the video sheet with the questions.</p> <p> What is Weathering? ...</p> <p><b>SW</b> will answer the questions from the video.</p>	<p><b>TOD:</b> Complete the lab summary questions.</p> <p>Compare and contrast agents of weathering</p> <p>Physical and Chemical Weathering</p>	<p><b>TOD:</b> Ask three to five questions about weathering, physical weathering, and chemical weathering.</p> <p><b>SW</b> share their questions for their peers to answer.</p> <p><b>TTW</b> connect the experiment to real-world examples like acid rain weathering statues and buildings.</p>	<p><b>TOD:</b> Summarize the main points about chemical weathering and the agents involved.</p> <p><b>TTW</b> allow time for students to ask questions and clarify any doubts.</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  <b>SW</b> complete CER: Collect Evidence (A) Question: Changing Earth's Surface</p> <p><b>TTW</b> evaluate student responses for accuracy.</p>
<p><b>Small Group Tasks (TBA)</b></p>					

**Week 4**

**GSE:**  
**S6E5. d.** Ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition. (Clarification statement: Environments of deposition include deltas, barrier island, beaches, marshes, and rivers)  
**S6E5. e.** Develop a model to demonstrate how natural processes (weathering, erosion, and deposition) and human activity change rocks and the surface of the Earth.

**Focused Concept:**  
 Earth’s surface is always changing due to natural processes and human activities. The surface is made of rock, minerals, and organic matter that make up the landforms we see. Landforms are the result of a combination of constructive and destructive forces, such as weathering, erosion, and deposition. Some human activities can change rocks and the surface of the Earth in both constructive and destructive ways.

Erosion    Transpiration    Environment    Deposition    Delta    Barrier Island,    Beaches  
 Mashers    Rivers

*The teacher will access **Module: Dynamic - Lesson 4: Changing Earth’s Surface** for online instruction and assign activities used for the instructional week.*

**SEP:** Developing and using models

**CCC:** Cause and Effect; Energy and Matter; Stability and Change

**Phenomenon:**  
**The Grand Canyon Changing Surfaces**

**DQ:**  
 How was the Grand Canyon formed?  
  
 What patterns do you notice in the landform?  
  
 Describe what events could have caused these patterns.

	Day 16	Day 17	Day 18	Day 19	Day 20
<b>Learning Target: The Student Will Be Able To (SWBAT)</b>	<b>SWBAT</b> can differentiate between the various agents of erosion.	<b>SWBAT</b> can differentiate between the various agents of erosion.	<b>SWBAT</b> ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition.	<b>SWBAT</b> ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition.	<b>SWBAT</b> ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition.
<b>Opening</b>	<b>TTW</b> ask students how the water can change the Earth’s surface?  <b>TTW</b> ask students to refer back to the Explain the Phenomenon from the previous lessons and asks for students to find	<b>TTW</b> review from the previous day’s lesson on Go with the Flow.	<b>TTW</b> ask students, How could a glacier change Earth’s surface?	<b>TTW</b> review agents of Wind, Erosion, and Deposition  SW engage in Think/Pair/Share with questions and answers related to wind, erosion, and deposition.	(* Located in textbook) <b>Revisit Science Probe: What is Erosion?</b>  SW reflection on how thinking has changed about Erosion.

	connections based on observation of the Grand Canyon.				
<b>Guided Practice/Transition</b>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online  Interactive Presentation</p> <p><b>Lab: Go with the Flow</b></p> <p>SW make a model stream and analyze the erosion and deposition that occur when water flows through its channel</p> <p><i>Teacher can show a lab video Go with the Flow.</i></p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online  Interactive Presentation</p> <p><b>Lab: Blowing Breezes</b></p> <p>SW model how wind erodes and deposits sediment.</p> <p><i>Teacher can show a lab video Blowing Breezes.</i></p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online  Interactive Presentation</p> <p><b>Investigation: Ice Cube Glacier</b></p> <p>SW observe what happens as a glacier moves slowly over Earth's surface.</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online  Interactive Presentation</p> <p><b>Close Reading</b>  <b>Read a Scientific Text: Landscape Change Over Time</b></p> <p>SW find evidence and make connections while reading a non-fiction text on how landscapes change over time.</p>	<p>(* Located in textbook)  <b>Elaborate</b>  SW Go Online  Interactive Presentation</p> <p><b>How Nature Works: Clues from the Canyon</b></p> <p>SW connect science ideas and concepts on weathering, deposition, and erosion through a feature.</p>
	How does water change Earth's surface?				
<b>Independent Practice</b>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online  Interactive Presentation:</p> <p><b>Read About:</b></p> <ol style="list-style-type: none"> <li>How does water change Earth's surface?</li> </ol> <p>TTW assign a <i>Foldable</i> activity to take notes.</p> <p><b>3D Thinking:</b> How does water change Earth's surface?</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online  Interactive Presentation:</p> <p><b>Read About:</b></p> <ol style="list-style-type: none"> <li>How does wind change Earth's surface?</li> </ol> <p>SW add to <i>Foldable</i> notes.</p> <p><b>3D Thinking:</b> How does wind change Earth's surface?</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  SW Go Online  Interactive Presentation:</p> <p><b>Read About:</b></p> <ol style="list-style-type: none"> <li>How does ice change Earth's surface?</li> </ol> <p>SW add to <i>Foldable</i> notes.</p> <p><b>3D Thinking:</b> How does ice change Earth's surface?</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  3D Thinking: How does ice change Earth's surface? (2)</p>	<p>(* Located in textbook)  <b>Evaluate</b>  Lesson Review: Changing Earth's Surface</p>



<b>Assessment/Summary</b>	<p>(* Located in textbook)  <b>Explore and Explain</b>  <b>TOD:</b> SW complete CER: Collect Evidence (B)  Question: Changing Earth's Surface</p> <p><b>TTW</b> evaluate student responses for accuracy.</p> <p><b>TTW and SW</b> discuss the completion of the lab.</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  <b>TOD:</b> SW complete CER: Collect Evidence (C)  Question: Changing Earth's Surface</p> <p><b>TTW</b> evaluate student responses for accuracy.</p> <p><b>TTW and SW</b> discuss the completion of the lab.</p>	<p>(* Located in textbook)  <b>Explore and Explain</b>  <b>TOD:</b> SW complete CER: Collect Evidence (D)  Question: Changing Earth's Surface</p> <p><b>TTW</b> evaluate student responses for accuracy.</p> <p><b>TTW and SW</b> discuss the completion of the investigation.</p>	<p>(* Located in textbook)  <b>Evaluate</b>  <b>TOD:</b> <i>CER: Revised Claim and Reasoning: Changing Earth's Surface</i></p> <p><b>SW</b> completed the revised claim and reasoning.</p>	<p>(* Located in textbook)  <b>Evaluate</b>  Lesson Check: Changing Earth's Surface</p> <p><b>TOD:</b> Write about how erosion factors change the surface of the Earth.</p>
<b>Small Group Tasks (TBA)</b>					

**Week 5**

<p><b>GSE:</b></p> <p><b>S6E5. e.</b> Develop a model to demonstrate how natural processes (weathering, erosion, and deposition) and human activity change rocks and the surface of the Earth.</p> <p><b>S6E5. h.</b> Plan and carry out an investigation to provide evidence that soil is composed of layers of weathered rocks</p>	<p><b>Focused Concept:</b>  Soil is composed of layers of weathered rocks and decomposed organic materials known as horizons. Layers or horizons come together to form a soil profile. Soil scientists use soil profiles to classify the soil for different uses. The topmost layer is topsoil, which is rich in organic matter, This layer contains humus (plant roots, worms, and micro-organisms, air, and water. Below the topsoil is the subsoil layer. The subsoil is mostly bedrock. Soil is found in many different types- from sand to clay. Soil is identified by using a soil triangle based on texture and color.</p>				
<p>and decomposed organic material,</p>	<p>Depositions    Cut bank    Discharge    Erosion    Flood    Sediment    Soil    Horizon  Soil Profile    Organic material</p>				
<p><b>SEP:</b> Plan and Carry out an investigation</p>	<p><b>CCC:</b> Cause and Effect; System and Systems Models</p>				
<p><b>Phenomenon:</b>  <a href="#">Georgia Little Grand Canyon</a></p> <p><b>The Power of Wind</b>  National Monument Park, located in western Colorado, is a popular destination for people who enjoy the outdoors. The park is home to many animals, such as bighorn sheep, coyotes, and red-tailed hawks. The primary attractions for the visitors to National Monument Park are the unique landforms, such as rock formations, canyons, and mountains.</p>			<p><b>DQ:</b>  How do the types of materials the rocks are made of and the locations of cracks in the rock influence how wind creates the rock formations?</p>		

	<b>Day 21</b>	<b>Day 22</b>	<b>Day 23</b>	<b>Day 24</b>	<b>Day 25</b>
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<p><b>Learning Target: The Student Will Be Able To (SWBAT)</b></p>	<p><b>SWBAT</b> ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition.</p>	<p><b>SWBAT</b> ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition</p>	<p><b>SWBAT</b> develop a model to demonstrate how natural processes and human activity change rocks and Earth's surface.</p>	<p><b>SWBAT</b> plan and carry out an investigation to provide evidence that soil is composed of weathered rock and decomposed organic material.</p>	<p><b>SWBAT</b> plan and carry out an investigation to provide evidence that soil is composed of weathered rock and decomposed organic material.</p>
<p><b>Opening</b></p>	<p><b>TTW</b> discuss key vocabulary: erosion, sediment, weathering.</p> <p> Unit 2 Assessment Prep</p> <p><b>TTW</b> and <b>SW</b> discuss how different types of rocks erode at different rates due to their composition.</p> <p><b>TTW</b> explain how cracks in rocks can affect the way wind erosion shapes formations.</p>	<p><b>TTW</b> Introduce the Phenomenon of the Georgia Little Grand Canyon.</p> <p><b>SW</b> watch a video <a href="#">Georgia Little Grand Canyon</a>.</p> <p><b>SW</b> compare and contrast the Grand Canyon to that of the Georgia Grand Canyon.</p> <p><b>SW</b> discuss how weathering, erosion, and deposition shaped each landform.</p> <p>Human Impact vs Nature</p>	<p><b>TTW</b> introduce the Phenomenon.</p> <p>The goal in this investigation is to figure out how these two factors influence rock formations that are created by wind. The guiding question of this investigation is:</p> <p><b>How do the types of materials the rocks are made of and the locations of cracks in the rock influence how wind creates the rock formations?</b></p> <p><b>Stage 1:</b> TTW show Images of the rock formations that can be seen in the National Monument Park.</p> <p><a href="#">Click Here</a> to see videos.</p> <p><b>SW</b> share about what they need to discover during the investigation.</p>	<p><b>TTW</b> discuss key vocabulary: erosion, sediment, weathering.</p> <p> Unit 2 Assessment ...</p>	<p><b>SW</b> complete an assessment of Learning.</p> <p>Students will complete a worksheet where they identify the type of rock being eroded in different scenarios.</p>

			<p>TTW present the guiding question for the investigation. “How do the types of materials the rocks are made of and the locations of cracks in the rock influence how wind creates the formations?”</p> <p><a href="#">Student Handout</a></p>		
<p><b>Guided Practice/ Transition</b></p>	<p>(* Located in textbook)</p> <p><b>Evaluate</b></p> <p>Additional Resources</p> <p><b>Reading Essentials:</b></p> <p><b>Changing Earth's Surface</b></p>	<p>TTW will explain the River Erosion Gizmo.</p> <p>SW complete Before the Gizmo Warm Up.</p> <p>TTW will model how to navigate the River Erosion Gizmo using the Gizmo Warm Up (TOOL TALK).</p>	<p><b>Stage 2: Ideas</b></p> <p>SW read and annotate the introduction for the lab.</p> <p>SW discuss core ideas, practices, and concepts they might use during their investigations.</p> <p><a href="#">Student Handout</a></p>	<p><b>Stage 4: Do</b></p> <p>SW conduct their investigations and collect data on exoplanets with their group or partner.</p> <p>SW analyze and make sense of their data to create a claim that answers the guiding question.</p> <p><a href="#">Supply List</a></p> <p><a href="#">Student Handout</a></p>	<p><b>Stage 6: Reflect</b></p> <p>SW discuss what they know about the disciplinary core ideas they used during the investigation and how these ideas can be used to make sense of other phenomena or related problems.</p> <p>How can we use what we know about weathering, erosion, and deposition to explain what is shown in this image from a scientific perspective?</p> <p>SW discuss some possible explanations in their groups, and then be ready to share their explanations with the rest of the class. Use handouts to keep track of any ideas from the discussion that you think are important to remember or will be useful in the future.</p>

					<p>SW identify the strengths and weaknesses of their group's performance during the investigation and set goals to make their next investigation more productive.</p> <p><a href="#">Student Handout</a></p>
<p><b>Independent Practice</b></p>	<p>Unit 2 Assessment Review</p> <p>SW complete Unit 2 Assessment Study Guide to prepare for assessment</p>	<p>SW complete <i>River Erosion Gizmo</i>.</p> <p><b>Activity A</b> – Students observe erosion and other characteristics of mountain rivers.</p> <p><b>Activity B</b> – Students observe erosion and other characteristics of meandering rivers.</p> <p>TTW facilitate the learning process.</p> <p>TTW review the Gizmo with the class.</p> <p><a href="#">Student Handout</a> <a href="#">Teacher Guide</a></p>	<p><b>Stage 3: Plan</b></p> <p>SW work in their groups to create an investigative plan for their investigations.</p> <p>SW share their proposals with another group or the teacher to determine if they are ready to advance to the research-gathering stage of the investigation.</p> <p>SW revise and improve their plans where recommended.</p> <p><a href="#">Student Handout</a></p> <p>SW be able to use the following materials during this investigation:</p> <ul style="list-style-type: none"> <li>• Brown sugar</li> <li>• Chocolate chips</li> <li>• Handh</li> </ul>	<p><b>Stage 5: Share</b></p> <p>SW create an evidence-based argument and communicate their findings to their peers.</p> <p>SW give and receive feedback during the argumentation session.</p> <p>SW revise their arguments to make them stronger based on the feedback they received during the argumentation session.</p> <p><a href="#">Student Handout</a></p>	<p><b>Stage 7: Report</b></p> <p>SW create reports to communicate what they did and what they figured out during the investigation.</p> <p>SW engage in the peer-review process to give and receive helpful feedback on their reports.</p> <p>SW revise their reports based on peer feedback and submit them to the teacher for final review.</p> <p>(Read the draft investigation reports written by at least three people outside your group. Be sure to use the peer-review guide to provide them with feedback about what they did well and what they could do to make their report even better. When finished, let your teacher know that you are ready to move on to the next activity.)</p> <p><a href="#">Student Handout</a></p>

			<ul style="list-style-type: none"> <li>• eld air pump</li> <li>• Stream tray</li> <li>• Small plastic cup</li> <li>• Cloth meter stick</li> <li>• Safety goggles</li> </ul>		
<b>Assessment Summary</b>	<b>TOD:</b> Assessment Practice Question of teachers choice (Reflective).	<b>TOD:</b> Assessment Practice Question of teachers choice (Reflective).	<b>TOD</b> <b>SW</b> write their background information from the ADI.  SW answer the question.  What is the guiding question?  How will you plan and carry out your investigation?	<b>TOD</b> <b>SW</b> share their observations from the experiment and summarizes how the types of materials in rocks and the presence of cracks influence wind erosion.	<b>TOD</b> <b>SW</b> revise their reports before you submit it to the teacher for a final grade. Keep in mind that the report can only be two pages in length.)  <b>Unit 2 Assessment</b>
<b>Small Group Tasks (TBA)</b>					

### Assessment Prep

Prepare students for assessment by reviewing the following Assessment Prep Presentation.

#### Unit 2 Assessment Prep

Provide the following guidance:

Ask the students to use what they know about the tasks completed to answer the provided assessment prep question.

- What is the question asking you?
- What do you know about the vocabulary or concept in the question?
- Is this question similar to any investigations or tasks we've completed?
- How can what you've done help you answer this question?
- Just view the assessment question: What is the question asking you?

Guide students to think about how their experience connects to the question.

Using the answer choices provided, ask the students the following:

- Identify a wrong answer: How do I know this answer is incorrect?
- Identify the right answer: How do we know this answer is correct?

Allow the students time to discuss in collaborative groups.

**TEACHER NOTE:** If students struggle with the question, review it the next day. Do not rush to the next question; instructional time is the only time they have to prepare for the end-of-year assessment.

### Labs / Investigations

#### Mandatory Labs

1. Lab- Metamorphic Sandwich p.168
2. Lab: Rock Detail p.152-153
3. ADI - The Power of Wind

#### Explore Learning Gizmo

1. Mineral Identification
2. River Erosion Gizmo

#### Pivot Interactives/Phet

### Additional Resources/Tasks

#### Supplemental Resources

[Department of Science Guidance Document](#)

[Rocks and Minerals](#)

<https://mineralseducationcoalition.org/>

<http://www.mineralogy4kids.org/>

[http://science-class.net/archive/science-class/Geology/rocks\\_minerals.htm](http://science-class.net/archive/science-class/Geology/rocks_minerals.htm)

<https://www.usgs.gov/science-support/osqi/yes/resources-teachers/grade-9-12>

#### Writing Activities/Science Journal:

Erosion is responsible for the constant transfer of sediment in a river from locations upstream to locations downstream. Explain how sediment affects a river. In your explanation, be sure to include how

- flooding might affect sediment
- sediment might affect the river habitat

CER rubric.JPG

#### Tasks:

rockingtherockcycle.pdf

#### Case Studies:

Case Study  
asbestos.pdf

**Textbook Reference:**

Chapter 3 - Weathering and Soil  
Chapter 4 - Erosion and Deposition

**Webinars:**

[www.educationportal.com](http://www.educationportal.com)  
<https://www.ted.com/talks>  
<https://www.khanacademy.org/>  
[www.discovereducation.com](http://www.discovereducation.com)

**Content:**

[www.pearsonrealize.com](http://www.pearsonrealize.com)

**Gizmos:** [www.explorelarning.com](http://www.explorelarning.com)

**Interactives and Simulations:**

[www.classzone.com](http://www.classzone.com)  
<https://phet.colorado.edu/en/simulations/category/earth-science>  
<https://www.edumedia-sciences.com/en/node/241-external-geologic-processes>  
<https://www.csun.edu/~vceed002/software/simulations/simulations.html>  
[https://www.pbs.org/wgbh/nova/education/resources/subj\\_03\\_02.html](https://www.pbs.org/wgbh/nova/education/resources/subj_03_02.html)

**Videos:**

<https://www.discoveryeducation.com/>  
<https://www.khanacademy.org/partner-content/mit-k12/mit-k12-ea/v/rock-cycle>  
<https://ed.ted.com/lessons?category=earth-and-space-science>