Lesson 4.1
Rocky Wonders
Lesson Overview

In this lesson, students are invited to consider how rock around the world is shaped, broken, worn down, and exposed. First, students are introduced to a new mystery in Desert Rocks National Park: why Desert Rocks Canyon has so much more exposed rock than nearby Keller’s Canyon. Students activate prior knowledge about what could cause rock to become exposed and add their ideas and questions to the Rocks and Fossils anticipatory chart. Then, students read Rocky Wonders to learn about how rock on Earth is weathered and eroded over time. As they read the book, students engage in the practice of making inferences from a text to help them understand what they read. Lastly, students reflect on their initial thinking about what could have caused rock to be exposed and discuss natural hazards. The purpose of this lesson is to introduce students to the process of erosion.

**Anchor Phenomenon:** There are more rock layers exposed in Desert Rocks Canyon than in Keller’s Canyon.

**Investigative Phenomenon:** There are rock formations all around the world.

**Students learn:**

- Erosion is the process in which rock breaks down and wears away.
- Geologists can use maps to help them understand what might have happened in a place in the past.
Students read about erosion in *Rocky Wonders* and make inferences as they read.

### Instructional Guide

1. **Pairs read.** Provide students with time to read the rest of the book with their partners.

2. **Introduce notebook page 69.** When students have finished reading, regain attention. Have students turn to page 69, *Making Inferences in Rocky Wonders*, in their notebooks. Review the instructions with students.

3. **Remind students about inferences in reading.**

   When scientists read, they make inferences. The answers won’t be in the book; you’ll have to put together what you read with information you already know. This can help you understand more about what you read.

4. **Discuss ideas about the White Desert.** Prompt students to turn to page 6 in *Rocky Wonders*. Read pages 6-8 aloud. Solicit ideas from students and lead a discussion of the inferences they might make.

   - What inference could you make from text?
   - Accept all answers.
   - There are many possible inferences you could make based on what we read. What is another inference you could make?
   - What information that you already knew did you use to make that inference?

5. **Have students complete the notebook page.** Students reread about three of the rocky wonders from the book, and record an inference about them. Then, students can choose one additional rocky wonder to read about, and fill in the last row by themselves.
6. **On-the-Fly Assessment: Students make inferences.** As students complete the notebook page, circulate and notice how they are making inferences from the text.

7. **Discuss students’ responses on the notebook page.** Call on students to share the inferences they made and discuss how they made them.

---

**Embedded Formative Assessment**

**On-the-Fly Assessment 11: Making Inferences While Reading *Rocky Wonders***

*Look for:* Students are to make inferences independently while reading, which is a good opportunity for you to see how they are using this strategy with text. Look for students to clearly combine the text with an idea from their background knowledge to make an inference. This inference should be something that is not explicitly stated in the text. Students’ inferences will vary widely, and that is okay in the context of this practice. To engage in the practice of making inferences, it is most important that students can combine what they read with their own ideas to draw a conclusion.

*Now what?* Students who are struggling to make inferences from the text might need more support with this way of thinking using a more familiar context. You can give an example of a tree without leaves, and ask students to make an inference about what season it is. Guide students toward separating out the observation of seeing no leaves, from the idea that some trees lose their leaves in the winter (or fall), to form an inference that the season must be winter or fall. You can then guide students toward a similar understanding for one of the examples on the notebook page. Reread a passage from the text with them, and think aloud as you explain how you use what you read, combined with an idea you know, to make an inference.

---

**Teacher Support**

**Rationale**

**Pedagogical Goals: Reading Before Making Inferences**

The last time students read, they made inferences as they read *Arguing to Solve a Mystery*. In this lesson, students will read the whole book with their partners first, then they will go back and reread selected sections of the text and make inferences about just these sections. This is so that students can read the whole book one time through to get familiar with the new idea of erosion that is introduced through the book. Students will have more context for making inferences about the text if they have been able to read the book once through. In addition, the rocky wonders selected for students to focus on when making inferences (on page 69 of the notebook) are those sections where there is more of an opportunity to draw various conclusions from the text.
Possible Responses

Answers will vary.
Making Inferences in *Rocky Wonders*

1. After you read *Rocky Wonders*, reread the sections of the book listed in the table below.
2. Think about an inference you can make based the text and information you already know.
3. Write what you read (in your own words) in the second column of the table.
4. Write your inference in the third column of the table.
5. In the last row of the table, choose one of the remaining rocky wonders from the book. Complete this row on your own.

<table>
<thead>
<tr>
<th>Rocky wonder</th>
<th>What I read</th>
<th>My inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Desert, Egypt (pages 6–8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bryce Canyon, USA (pages 9–12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rock-Breaking Cherry Tree, Japan (pages 13–14)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

© 2018 The Regents of the University of California. All rights reserved. Permission granted to photocopy for classroom use.
**Hacer inferencias en *Maravillas rocosas***

1. Después de leer *Maravillas rocosas*, vuelve a leer las secciones del libro enumeradas en la tabla debajo.
2. Piensa en una inferencia que puedas hacer basándote en el texto y la información que ya conoces.
3. En la segunda columna de la tabla, escribe lo que leíste (con tus propias palabras).
4. Escribe tu inferencia en la tercera columna de la tabla.
5. En la última fila de la tabla, elige una de las maravillas rocosas restantes del libro. Completa esta fila tú solo/a:

<table>
<thead>
<tr>
<th>Maravilla rocosa</th>
<th>Lo que leí</th>
<th>Mi inferencia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desierto Blanco, Egipto (páginas 6–8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cañón Bryce, EUA (páginas 9–12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>El cerezo que rompe la roca, Japón</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>