Lesson 1.2
Water Shortages, Water Solutions
Students read *Water Shortages, Water Solutions* to learn more about how humans can affect the availability of freshwater. Students start the lesson by activating prior knowledge as they brainstorm ways in which they use water and reflect on the big ideas they learned in the previous lesson. Students are introduced to the sense-making strategy of synthesizing, which they will use throughout the unit to understand what they are reading and to make sense of ideas they are investigating. After the teacher models thinking about and recording big ideas, students read *Water Shortages, Water Solutions* in pairs. Through reading and discussing the book, students learn how droughts, overuse, and pollution cause water shortages around the world, and they see the impacts that water shortages have on humans. The purpose of this lesson is for students to recognize some of the ways that human activity impacts the availability of freshwater.

**Anchor Phenomenon:** One side of Ferris Island has a water shortage and the other does not.

**Investigative Phenomenon:** There are water shortages around the world.

**Students learn:**

- Droughts, overuse, and pollution can cause water shortages.
- When people use water, there is less clean freshwater available to use.
- Synthesizing can help readers understand informational text.
- Science affects everyday life.
Partner Reading

Students read *Water Shortages, Water Solutions* with a partner and discuss big ideas from the book.

Instructional Guide

1. **Designate pairs and distribute books.** Give one copy of the book to each pair of students. Allow students a few minutes to look through the book and notice how it is organized. Then, regain the class's attention.

2. **Read pages 4–5 of *Water Shortages, Water Solutions* together.**

   Let's read the first few pages together and think about our question *How can people affect how much freshwater is available?*

   Call on volunteers to take turns reading while the rest of the class follows along. Pause to discuss ideas in the text as needed.

3. **Model determining a big idea from page 5.**

   On page 5, it says that overuse, pollution, and drought are three major causes of water shortages. I think this is a big idea since it is what the book is going to be about. It also relates to our question of how people can affect how much water is available. For example, if people use more water than is available during a drought, available water decreases. That is one way that people can affect how much freshwater is available on Earth.

4. **Model recording an idea from the book.** On your projected version of the notebook page, write “Overuse, pollution, and drought are three major causes of water shortages.” Have students do the same in their notebooks.

5. **Set the purpose for reading the rest of the book.**

   As you read the rest of the book, think about the question of how humans can affect how much freshwater is available. With your partner, discuss and then record any other big ideas you read about that you think help answer the question.
6. **Partners read.** Circulate as students read. Remind students to continue thinking about the question in their notebook as they read, and to stop periodically to discuss and record big ideas with their partners.

**Teacher Support**

**Rationale**

**Pedagogical Goals: Modeling Reading**
Teacher modeling is an important component of teaching students to read informational texts effectively. As an expert reader, you already understand how to read these texts effectively and can use your expertise to model and make explicit your thinking processes for students. Think aloud as you read part of the text and model sharing big ideas. The goal of modeling is to help engage all students in deep and curious reading. The more you model how to read a science text purposefully, the more successful you will be in motivating students to use the same strategies.

**Rationale**

**Pedagogical Goals: Understanding the Nature of Science**
One goal set forth by the Next Generation Science Standards (NGSS) is for students to understand the nature of science as a discipline and how scientific knowledge develops over time. The NGSS call out eight understandings about the nature of science which are woven throughout the Amplify Science curriculum. This unit gives students an opportunity to experience the understanding that Science Is a Human Endeavor. In this lesson, *Water Shortages, Water Solutions* illustrates the idea that science affects everyday life—specifically, monitoring, predicting, and solving problems related to water affects the availability of this important resource.
Synthesizing Ideas About Water Shortages

1. Read the question below.
2. Recall big ideas from *Water Encyclopedia* that help you answer the question, and record them in the first box.
3. Read pages 4–7 of *Water Shortages, Water Solutions* and record big ideas that help you answer the question in the second box.
4. Connect ideas together to come up with a new understanding that answers the question.
5. Record your new understanding in the box below the arrow.

Question: How can people affect how much freshwater is available?

Source: *Water Encyclopedia*

Ideas:

Source: *Water Shortages, Water Solutions*

Ideas:

New understanding:
Partner Reading

Students read *Water Shortages, Water Solutions* with a partner and discuss big ideas from the book.

Instructional Guide

1. **Designate pairs and distribute books.** Give one copy of the book to each pair of students. Allow students a few minutes to look through the book and notice how it is organized. Then, regain the class’s attention.

2. **Read pages 4–5 of *Water Shortages, Water Solutions* together.**

   Leamos juntos las primeras páginas y pensemos en nuestra pregunta ¿Cómo es que la gente puede afectar la cantidad de agua dulce disponible?

   Call on volunteers to take turns reading while the rest of the class follows along. Pause to discuss ideas in the text as needed.

3. **Model determining a big idea from page 5.**

   En la página cinco, dice que el uso excesivo, la contaminación y la sequía son tres causas importante de la escasez de agua. Pienso que esta es una gran idea porque es sobre lo que va a tratar el libro. También se relaciona con nuestra pregunta de cómo puede afectar la gente cuánta agua dulce hay disponible. Por ejemplo, si la gente usa más agua de la que hay disponible durante una sequía, el agua disponible disminuye. Esa es una manera en la que la gente puede afectar la cantidad de agua dulce disponible sobre la Tierra.

4. **Model recording an idea from the book.** On your projected version of the notebook page, write “Overuse, pollution, and drought are three major causes of water shortages.” Have students do the same in their notebooks.

5. **Set the purpose for reading the rest of the book.**

   Mientras leen el resto del libro, piensen en la pregunta de cómo los humanos pueden afectar cuánta agua dulce hay disponible. En parejas, discutan y luego apunten otras grandes ideas del libro que piensan que ayudarán a responder la pregunta.
6. **Partners read.** Circulate as students read. Remind students to continue thinking about the question in their notebook as they read, and to stop periodically to discuss and record big ideas with their partners.

**Teacher Support**

**Rationale**

**Pedagogical Goals: Modeling Reading**
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Sintetizar ideas sobre la escasez de agua

1. Lee la pregunta debajo.
2. Piensa en ideas importantes de la *Enciclopedia del agua* que te ayuden a responder la pregunta y apúntalas en el primer cuadro.
3. Lee las páginas 4 a 7 de *Escasez de agua, soluciones para el agua* y apunta ideas importantes que te ayuden a responder la pregunta en el segundo cuadro.
4. Conecta las ideas para llegar a una nueva comprensión que responda la pregunta.
5. Apunta tu nueva comprensión en el cuadro debajo de la flecha.

**Pregunta:** ¿Cómo es que la gente puede afectar la cantidad de agua dulce disponible?

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<thead>
<tr>
<th>Fuente: <em>Enciclopedia del agua</em></th>
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<td>Ideas:</td>
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Nueva comprensión: