Lesson 4.4
Making Sense of How Landforms Erode Quickly
Lesson Overview

In this lesson, students reflect on how landforms erode quickly. Students discuss evidence that they have gathered in previous lessons to support the idea that wind and water can erode a landform quickly if the landform is made of loose materials. Pairs discuss and record evidence from multiple sources in an evidence chart located in their notebooks. Students then model their understanding of how some landforms erode slowly and some erode quickly in the *Changing Landforms* Modeling Tool. Using the Building on Ideas discourse routine, students discuss similarities and differences between landforms that erode quickly and landforms that erode slowly. They then return to the book *Landform Postcards* and use the photos of landforms to discuss whether each landform could erode quickly or slowly. The purpose of this lesson is to solidify students’ understanding of how some landforms can erode quickly, before applying this understanding to answer the Chapter 4 Question in the next lesson.

**Anchor Phenomenon:** A cliff has eroded overnight.
**Investigative Phenomenon:** Landforms can change quickly.

**Students learn:**

- There are similarities and differences between landforms that erode quickly and landforms that erode slowly.
Partners use the Building on Ideas routine to discuss ideas they have learned in Chapter 4, and then return to the book *Landform Postcards*.

**Instructional Guide**

1. **Remind students of the Building on Ideas routine.** Explain that students will use the Building on Ideas routine to discuss their ideas. Remind students of the routine, if necessary.

2. **Designate partners.** Make sure students know who is Partner A and who is Partner B.

3. **Project Building on Ideas Question 1.** Read the question aloud. Point out the scientific language that partners can use to respond to each other.

**Building on Ideas Question 1**

*How are landforms that erode quickly and landforms that erode slowly similar?*

**Partner A:** Landforms that erode quickly and landforms that erode slowly are similar because __________.

**Partner B:** I heard you say __________.
   I agree/disagree because __________.

**Partner A:** I heard you say __________.
   This changed/didn’t change what I think because __________.

How are landforms that erode quickly and landforms that erode slowly similar?

Partner A will answer the question while Partner B listens. Partner A can use this language to answer the question: *Landforms that erode quickly and landforms that erode slowly are similar because _____.*
Give pairs a minute to discuss the first question. When you give the signal, Partner B should restate and add to Partner A’s answer. Partner A will have a final opportunity to respond to Partner B before the pairs discuss their ideas with another pair.

4. Have each pair of students join with another pair. Have pairs discuss their ideas about the question with another pair. Ask a few volunteers to share ideas about the first question with the class.

5. Project Building on Ideas Question 2. Read the question aloud. Let students know that for this question, Partner B will respond first. Point out that the scientific language that students can use for this question is a bit different than it was for the first question.

Building on Ideas Question 2
How can you tell if a landform will erode quickly or slowly?

**Partner B:** You can tell that a landform will erode quickly if __________.
You can tell that a landform will erode slowly if __________.

**Partner A:** I heard you say __________.
I agree/disagree because __________.

**Partner B:** I heard you say __________.
This changed/didn’t change what I think because __________.

How can you tell if a landform will erode quickly or slowly?

Give pairs a minute to discuss the second question. When you give the signal, Partner A should restate and add to Partner B’s answer. Partner B will have a final opportunity to respond to Partner A before the pairs discuss their ideas with another pair.

6. Have two sets of pairs discuss. Have pairs discuss their ideas about the question with another pair. Ask a few volunteers to share ideas about the second question with the class.

7. Refer to the key concept you posted in Lesson 4.2: *Wind and water can erode a landform quickly if the landform is made of loose materials.*

In this lesson, we have discussed evidence that supports this idea. We have also used the *Changing Landforms* Modeling Tool to show a landform made of loose materials eroding quickly.

Let’s return to a book you read at the beginning of the unit—*Landform Postcards*. When you first read this book, you were just learning about what a landform is. Now, we are going to review the photos in the book to decide whether the landforms in the photos could erode quickly or slowly.
8. Designate partners and distribute books.

9. Model making observations of mesas to discuss erosion. Have students turn to page 8. Explain that you will use the photo on this page to discuss whether the landforms could erode slowly or quickly.

The mesas in this photo look like they are made of solid rock. This means it would take a long time for wind or water to erode these landforms because they are made of hard, solid rock.

10. Have pairs discuss erosion in Landform Postcards. Circulate and support pairs as they discuss landforms eroding quickly or slowly.

11. Invite students to share their ideas with the class. Ask several students to share their ideas about the landforms in the book. It is fine for students to disagree as long as they support their ideas with evidence.

12. Point out how students’ understanding of erosion has grown. Point out that students could not have made these types of detailed predictions about how the landforms might erode back when students first read this book at the beginning of the unit.

13. Collect all copies of Landform Postcards and conclude the lesson. Explain that in the next lesson students will create diagrams and write explanations about why the nearby cliff eroded overnight.

Teacher Support

Rationale

Literacy Note: Returning to Landform Postcards
Returning to the book Landform Postcards encourages students to transfer ideas about fast and slow erosion to landforms they read about at the beginning of the unit. At the beginning of the unit, students read Landform Postcards for the purpose of becoming familiar with different types of landforms and to begin to think about what landforms are made of. At the end of the unit, students’ ideas about what landforms are made of, and how landforms erode, have changed. Returning to the book offers students an opportunity to revise their initial thinking about landforms and deepens their understanding of landform erosion.
Partners use the Building on Ideas routine to discuss ideas they have learned in Chapter 4, and then return to the book *Landform Postcards*.

### Instructional Guide

1. **Remind students of the Building on Ideas routine.** Explain that students will use the Building on Ideas routine to discuss their ideas. Remind students of the routine, if necessary.

2. **Designate partners.** Make sure students know who is Partner A and who is Partner B.

3. **Project Building on Ideas Question 1.** Read the question aloud. Point out the scientific language that partners can use to respond to each other.

#### Pregunta 1 para desarrollar ideas

¿De qué manera son similares los accidentes geográficos que se erosionan rápidamente y los accidentes geográficos que se erosionan lentamente?

- **Compañero o Compañera A:** Los accidentes geográficos que se erosionan rápidamente y los accidentes geográficos que se erosionan lentamente son similares porque ________.

- **Compañero o Compañera B:** Escuché que dijiste ________.

- **Compañero o Compañera A:** Estoy de acuerdo/no estoy de acuerdo porque ________.

- **Compañero o Compañera B:** Escuché que dijiste ________.

- **Compañero o Compañera A:** Esto cambió/no cambió lo que pienso porque ________.

¿De qué manera son similares los accidentes geográficos que se erosionan rápidamente y los accidentes geográficos que se erosionan lentamente?
Give pairs a minute to discuss the first question. When you give the signal, Partner B should restate and add to Partner A’s answer. Partner A will have a final opportunity to respond to Partner B before the pairs discuss their ideas with another pair.

4. Have each pair of students join with another pair. Have pairs discuss their ideas about the question with another pair. Ask a few volunteers to share ideas about the first question with the class.

5. Project Building on Ideas Question 2. Read the question aloud. Let students know that for this question, Partner B will respond first. Point out that the scientific language that students can use for this question is a bit different than it was for the first question.

Pregunta 2 para desarrollar ideas
¿Cómo puedes saber si un accidente geográfico se erosionará rápidamente o lentamente?

| Compañero o Compañera B: | Puedes saber que un accidente geográfico se erosionará rápidamente si _______. |
| Compañero o Compañera A: | Puedes saber que un accidente geográfico se erosionará lentamente si _______. |
| Compañero o Compañera B: | Escuché que dijiste _______. |
| Compañero o Compañera A: | Estoy de acuerdo/no estoy de acuerdo porque _______. |
| Compañero o Compañera A: | Escuché que dijiste _______. |
| Compañero o Compañera B: | Esto cambió/no cambió lo que pienso porque _______. |

¿Cómo pueden saber si un accidente geográfico se erosionará rápidamente o lentamente?

Give pairs a minute to discuss the second question. When you give the signal, Partner A should restate and add to Partner B’s answer. Partner B will have a final opportunity to respond to Partner A before the pairs discuss their ideas with another pair.

6. Have two sets of pairs discuss. Have pairs discuss their ideas about the question with another pair. Ask a few volunteers to share ideas about the second question with the class.

7. Refer to the key concept you posted in Lesson 4.2: *Wind and water can erode a landform quickly if the landform is made of loose materials.*
8. Designate partners and distribute books.

9. Model making observations of mesas to discuss erosion. Have students turn to page 8. Explain that you will use the photo on this page to discuss whether the landforms could erode slowly or quickly.

Las mesetas en esta foto parecen estar hechas de roca sólida. Esto significa que se necesitaría un largo tiempo para que el viento o el agua erosionaran estos accidentes geográficos, porque están hechos de roca dura y sólida.

10. Have pairs discuss erosion in Landform Postcards. Circulate and support pairs as they discuss landforms eroding quickly or slowly.

11. Invite students to share their ideas with the class. Ask several students to share their ideas about the landforms in the book. It is fine for students to disagree as long as they support their ideas with evidence.

12. Point out how students’ understanding of erosion has grown. Point out that students could not have made these types of detailed predictions about how the landforms might erode back when students first read this book at the beginning of the unit.

13. Collect all copies of Landform Postcards and conclude the lesson. Explain that in the next lesson students will create diagrams and write explanations about why the nearby cliff eroded overnight.

**Teacher Support**

**Rationale**

**Literacy Note:** Returning to *Landform Postcards*
Returning to the book *Landform Postcards* encourages students to transfer ideas about fast and slow erosion to landforms they read about at the beginning of the unit. At the beginning of the unit, students read *Landform Postcards* for the purpose of becoming familiar with different types of landforms and to begin to think about what landforms are made of. At the end of the unit, students’ ideas about what landforms are made of, and how landforms erode, have changed. Returning to the book offers students an opportunity to revise their initial thinking about landforms and deepens their understanding of landform erosion.