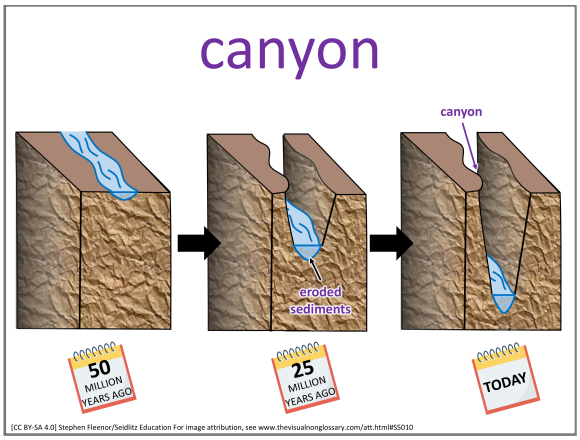
Teacher Guide for the Lesson on **canyon**



Standard:
5.10(C)

Content Objective:
We can model and explain how water changes Earth's surface over time to form a **canyon**.

Language Objective: Answer the following question in complete sentences using the sentence stem and the key vocabulary of the lesson:

> How might a **canyon** change over thousands of years if a river's flow becomes slower or faster over time?
>
> *A **canyon** might change over time by…*

Other key vocabulary: erosion

By studying this visual, students might:

Notice	Wonder
• The river is flowing through rock in all three pictures.	• How long does it take for a canyon to form?
• The land gets deeper and narrower over time.	• What causes erosion to happen faster or slower?
• The river carries sediments as it moves.	• How does weathering help break down the rock first?
• The middle image shows eroded sediments at the bottom.	• What happens to the sediments after they are carried away?
• The final image shows a deep canyon with steep sides.	• Can wind or ice also help form a canyon?

EXTENDING THE DISCUSSION

- After randomly calling on students, if there is anything from this list that was not mentioned, then ask the class, "Did anyone notice...?"
- After students have shared what they notice, ask the class, "Did anyone wonder...?" using the suggestions above or anything else you might think is interesting or relevant to the lesson.

Structured Conversation Prompts

OBSERVATIONAL	RELATIONAL	INFERENTIAL
How does a **canyon** form? A **canyon** forms by...	How is a **canyon** related to **erosion**? A **canyon** is related to **erosion** because...	How might a **canyon** change over thousands of years if a river's flow becomes slower or faster over time? A **canyon** might change over time by...

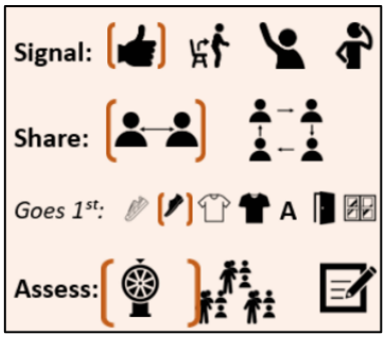
Example Student Responses to the Observational Question

Low-Level	High-Level
*A **canyon** forms by a river cutting into the rock.*	*A **canyon** forms by water causing **weathering** and **erosion**, which break down rock and carry away **sediments** over a long period of time.*

RESPONDING TO RESPONSES

Emphasize and celebrate each student's use of the key vocabulary to support a culture of "no wrong answers."

STRUCTURING STUDENT CONVERSATIONS



Have students list observations from the visual as a warm-up, then use the Q-SSS-A process to guide small-group conversations. In the slide decks, brackets can be moved to prepare the structured conversation. In the example to the right, students will be instructed: Q-SSS-A.

- To put a thumb up, then lower their hand when they are ready to answer the question
- To share with their elbow/shoulder partner, and that the student with the darkest shoe will share first
- That they will be randomly called on after the conversation

Here is an example of structuring a conversation with Q-SSS-A.

Note: the inferential question is the same as the language objective. It is recommended that students answer the inferential question in a small-group discussion before answering it individually as the closure or exit ticket of the lesson.

Structured Reading

READING PURPOSE	PAT LIST	POST-READING DISCUSSION
The purpose for reading is to understand how **weathering** and **erosion** change Earth's surface to form a **canyon** over time.	• How weathering changes rock • How erosion moves sediments • How small changes over time lead to a canyon	How do **weathering** and **erosion** work together to form a **canyon** over time? ***Weathering*** *and* ***erosion*** *work together to form a* ***canyon*** *by…*

STRUCTURING THE READING

Communicate the purpose of reading to the students and instruct them to make a note every time they see something on the PAT ("Pay Attention To") list. How you have students note items on the PAT list is up to you. This could include:

- Putting an asterisk in the margin
- Underlining text that supports the PAT list
- Putting a comment in the margin

Follow the reading with the post-reading discussion. Structure this discussion using the Q-SSS-A process just like the structured conversations in this lesson.

Note: you might find the relational question is better discussed before or after the reading. This depends on whether the relational question is directly related to the reading or might make connections across units.

DIFFERENTIATING THE READING

You will notice that three different reading passages are provided with this lesson. Look at the shapes in the top-left of each passage to determine the grade level.

BELOW GRADE LEVEL	ON GRADE LEVEL	ABOVE GRADE LEVEL
Triangle is bottom-left	*Square is bottom-left*	*Circle is bottom-left*

In a class with students at diverse reading level proficiencies, you can give the appropriate reading passage to different students, while having all students follow the same PAT list and post-reading discussion.