Lessons 28–30

Cliff Dwellings at Mesa Verde

Prepare

In Lessons 28 through 30, students synthesize their learning from throughout the module and express their understanding of weather and shelter in a Socratic Seminar and an End-of-Module Assessment. In Lesson 28, students discuss the Essential Question in a Socratic Seminar and reflect on how they built their knowledge during the module. Lesson 29 introduces students to a new phenomenon, the Blizzard of 1978 in Boston. Students then complete the End-of-Module Assessment, which is based on that phenomenon. During the End-of-Module Assessment, students describe the weather in Boston during the Blizzard of 1978 and consider how people can prepare for a blizzard. In Lesson 30, this module's culminating lesson, students debrief the assessment and reflect on how they built their knowledge throughout the module.

Application of Concepts

Tasks

Socratic Seminar

End-of-Module Assessment

Essential Question

How did the cliff dwellings at Mesa Verde protect people from the weather?

Phenomenon Question

How did the Blizzard of 1978 affect people in Boston?

Student Learning

Knowledge Statement

Weather affects people and their surroundings.

Objectives

- Lesson 28: Explain how the cliff dwellings at Mesa Verde protected people from the weather. (Socratic Seminar)
- Lesson 29: Describe the weather during the Blizzard of 1978 in Boston, and explain how the storm affected people there. (End-of-Module Assessment)
- Lesson 30: Explain how the weather affects people and their surroundings. (End-of-Module Debrief)

Texas Essential Knowledge and Skills Addressed*

K.8A **Observe and describe weather changes from day to day** and over seasons. (Mastered)

K.8B **Identify events that have repeating patterns, including** seasons of the year and **day and night**. (Mastered)

K.8C **Observe, describe, and illustrate objects in the sky, such as the clouds**, Moon, **and** stars, including **the Sun**. (Mastered)

English Language Proficiency Standards Addressed

2H Understand implicit ideas and information in increasingly complex spoken language commensurate with grade-level learning expectations.

3E Share information in cooperative learning interactions.

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* This section lists the standards students may apply during instructional activities in these lessons. See the End-of-Module Assessment rubric for a list of standards the assessment addresses.

3F Ask and give information ranging from using a very limited bank of high-frequency, high-need, concrete vocabulary, including key words and expressions needed for basic communication in academic and social contexts, to using abstract and content-based vocabulary during extended speaking assignments.

Materials

		Lesson 28	Lesson 29	Lesson 30
Student	Key term card (1)	•		
	End-of-Module Assessment		•	
Teacher	Mesa Verde Long Ago Knowledge Deck poster	•		
	Snow Day! (Laminack and Gustavson 2007)		•	
	Patterns Card (1)			•
Preparation	Prepare key term cards. (See Lesson 28 Resource.)	•		
	Cue "Blizzard of 1978" video (WGBH 2013): http://phdsci.link/1542.		•	•
	Score End-of-Module Assessment and write individual feedback.			•
	Select at least one End-of-Module Assessment item for the class to debrief, and prepare a sample response for that item to share with students.			•
	Prepare Patterns card. (See Lesson 30 Resource.)			•
	Select student work products that show evidence of concept mastery, and display them in different areas of the classroom. Student work products may include the anchor model, class charts, selected Science Logbook pages, and Engineering Challenge designs.			•

Lesson 28

Objective: Explain how the cliff dwellings at Mesa Verde protected people from the weather. (Socratic Seminar)

Agenda

Launch (7 minutes)

Learn (20 minutes)

- Prepare for Socratic Seminar (5 minutes)
- Engage in Socratic Seminar (15 minutes)

Land (8 minutes)

Launch 7 minutes

Tell students that they will participate in a Link Up routine to identify relationships, or connections, between key terms they learned throughout the module. Ask for a few volunteers to model the routine. Distribute a different key term card (Lesson 28 Resource) to each volunteer, and read aloud each term. Describe the routine to the class, explaining each step while guiding the volunteers through one round. Have volunteers complete a few additional rounds. Point out that terms can relate to each other in different ways.

Next, distribute key term cards to the rest of the class so each student has a card. While handing out the cards, make sure to read aloud each term. Prompt students to circulate and find a partner with a different, but related, key term card. Ask students to discuss the following question with their partner.

▶ How do these words relate?

Continue the routine until students have had the opportunity to discuss their key terms with a few other students. After the routine, invite partners from the final round to share their key terms with the class and to explain how the terms are related.

Teacher Note

The Link Up routine helps students understand relationships between scientific terms. Each student receives a key term card. Then students circulate to find a student with a term that they think relates to theirs. When they find someone with a related term, the two students discuss the relationship between their terms (3E).

Differentiation

Before using the Link Up routine with key terms, consider having students practice with familiar words such as *windy*, *warm*, *tool*, and *measure*. Highlight connections between these familiar words to help students understand the different ways terms can be related (3F).

Learn 20 minutes

Prepare for Socratic Seminar (5 minutes)

Display the front of the Mesa Verde Long Ago Knowledge Deck poster. Remind students of the Essential Question: **How did the cliff dwellings at Mesa Verde protect people from the weather?** Ask students to think about what they have learned since they first observed the painting and how their answer to the Essential Question has changed.

Tell students they will share their current understanding of the Essential Question with one another through a Socratic Seminar discussion. Review the routines and expectations for participating effectively in a Socratic Seminar, including classroom guidelines and resources for speaking and listening. Explain that students can refer to the anchor model, the anchor chart, and other classroom resources to support their discussion. Then display and read aloud the Essential Question: **How did the cliff dwellings at Mesa Verde protect people from the weather?** Ask students to prepare for the seminar by briefly discussing the question with a partner.

Engage in Socratic Seminar (15 minutes)

Divide the class into groups, and instruct students in each group to sit in a circle. Read aloud the Essential Question to begin the Socratic Seminar discussion. Have students discuss their answer to the Essential Question with their group. Allow students to respond to one another directly, with minimal teacher facilitation. Students should remind one another of conversation norms, ask for evidence, and pose questions to extend the conversation. As needed, step in briefly to reinforce norms for collaborative conversations. If students' conversation wanes or wanders, consider asking one of the following questions to stimulate additional conversation:

- How can we describe the weather?
- What can we find out by looking at weather data?
- How can the weather be harmful?
- How did the weather affect the Ancestral Pueblo people at Mesa Verde?

Content Area Connection: English

The Socratic Seminar allows students to use their speaking and listening skills to express and deepen their science content knowledge. In a Socratic Seminar, students participate in a collaborative, evidence-based, academic conversation. In this discussion, students should work toward grade-level expectations for collaborative conversations. See the Socratic Seminar resource in the Implementation Guide for more background.

Check for Understanding

As students engage in the Socratic Seminar, note how they provide details about scientific ideas and practices. To monitor student participation and the flow of the conversation, consider writing each student's name around the edge of a sheet of paper before the lesson and drawing lines between speakers during the conversation.

Teacher Note

Depending on students' familiarity with Socratic Seminars, consider adding some of these supports to the seminar (3F).

- Students use sentence frames to help them build on one another's remarks.
- Students use talking chips. Each student receives a chip. After a student shares, the student places the chip in the middle of the circle. After every student shares and all chips are in the circle, students retrieve the chips and start the process again.

Land 8 minutes

Restate a few responses from the Socratic Seminar that show evidence of students' learning. Ask students to reflect silently on how their knowledge has grown since the beginning of the module.

▶ You have learned a lot about the weather and the ways that the cliff dwellings at Mesa Verde protected people from the weather. What did you do to build your knowledge?

Model how to find a student work product (e.g., a page from a Science Logbook or a class chart) that shows evidence of how students built their knowledge during the module. Explain the difference between how students learned and what they learned. Instruct students to find one work product in their Science Logbooks or elsewhere in the classroom that shows evidence of how they learned. Have students compare how they learned with a partner who chose a different work product.

▶ What did you do in this work?

- *(Response comparing anchor model with Lesson 12 Activity Guide) For the anchor model, we learned about the people at Mesa Verde, and we used what we found out to make a model of a cliff dwelling at Mesa Verde. For the Engineering Challenge, we made a model shelter for archaeologists at Mesa Verde.*
- *(Response comparing Lesson 5 Activity Guide with Lesson 9 Activity Guide). In one lesson, we learned how to measure temperature with a thermometer. In the other lesson, we measured the temperature in sunlight and in shade to see where it was warmer.*

▶ What is the same about what you did? What is different?

- *(Response comparing anchor model with Lesson 12 Activity Guide) Both times, we made models. One thing that was different was who made them. For the anchor model, it was our class. For the shelter model, it was me and my partner.*
- *(Response comparing Lesson 5 Activity Guide with Lesson 9 Activity Guide). We used thermometers to measure temperature in both lessons. In one lesson, we figured out how to use thermometers to measure temperature. In the other lesson, we used thermometers to measure the temperature of water in sunlight and in shade.*

Teacher Note

Display the driving question board, anchor chart, and anchor model to help students reflect on how their knowledge has grown (3F).

Differentiation

To provide additional support, assign student pairs specific work products that demonstrate clear evidence of similarities in the learning process. For example, consider pairing these work products (3E):

- Anchor model and Lesson 12 Activity Guide
- Lesson 5 Activity Guide and Lesson 9 Activity Guide

Restate several student responses that relate to scientific investigation and reasoning standards. Explain to students that scientists investigate and reason to learn about the world and gather evidence to develop scientific ideas. Select a student response and explain how it relates to a practice from one of the scientific investigation and reasoning standards. Ask students to share other experiences they have had with using this practice, such as outside of school. Help students identify how they used the practice to build knowledge of phenomena or to develop scientific ideas. Tell students they can continue to use practices in science and engineering to understand the world around them.

Teacher Note

This discussion should help students reflect on links between phenomena, ideas, concepts, and practices in science and engineering.