

cobblestone

TO THE MOON!

In this issue of *Cobblestone*, students explore how space exploration in the 20th and 21st centuries has expanded the capabilities of militaries and governments across the world.

CONVERSATION QUESTION

How did the space race usher in an era of historical change?

TEACHING OBJECTIVES

- Students will learn about the causes and effects of space exploration.
- Students will classify series of historical events as examples of change and/or continuity.
- Students will use evidence to develop a claim about the past.
- Students will explain multiple effects of developments in the past.
- Students will create a multimedia presentation.
- Students will use details from a text to write historical fiction.
- Students will conduct research.



In addition to supplemental materials focused on core Social Studies skills, this flexible teaching tool offers vocabulary-building activities, questions for discussion, and cross-curricular activities.

SELECTIONS

- **The Space Race Begins**
Expository Nonfiction, ~850L
- **Race to the Moon Time Line**
Expository Nonfiction, ~950L
- **What's Next for NASA?**
Expository Nonfiction, ~750L

Cobblestone® Teacher Guide: July/August 2019

The Space Race Begins

pp. 4–7, Expository Nonfiction

As tensions between the Soviet Union and the United States ramped up following World War II, the two countries began a race to dominate space and the technologies necessary to operate in it.



OBJECTIVES

- Students will read and analyze a nonfiction article.
- Students will learn about the causes and effects of space exploration.
- Students will classify a series of historical events as examples of change and/or continuity.
- Students will create a multimedia presentation.

KEY VOCABULARY

- satellite (p. 4)** a machine placed in orbit around the earth, moon, sun, or a planet to collect or transmit information
- Cold War (p. 4)** the nonviolent conflict between the U.S. and the Soviet Union after 1945 that included threats and propaganda but no actual fighting
- International Space Station (p. 7)** a large spacecraft orbiting the Earth where astronauts from different countries live while conducting scientific experiments

ENGAGE

Conversation Question: How did the space race usher in an era of historical change?

Tell students that in the aftermath of World War II it was clear that the United States and the Soviet Union were the world's two most powerful countries. Point out that because the governments of these countries distrusted one another, they entered a period of hostility toward one another. Ask students to identify ways in which these countries competed with each other during this period. Then introduce the concept of the Space Race as a competition between these two powers.

INTRODUCE VOCABULARY

Review the vocabulary words and definitions. Then display the sentences below. Have students complete the sentences using the vocabulary words. Go over responses. Then remind students to look for the vocabulary words as they read the article.

- The ability to launch a _____ into orbit was one of the first developments in space exploration during the _____.
- After recognizing the need to cooperate to gather information about space, several countries came together to create the _____.

READ & DISCUSS

Have students read the article with a partner. Then use these prompts for discussion:

- Why did the space race begin?
- What were NASA's primary objectives?
- How has NASA's work benefited nations in a nonmilitary way?

SKILL FOCUS: Classify Events

INSTRUCT: Tell students that events and developments in history can be classified as examples either of change or continuity. Explain that some events represent a change in how things have been done or thought about in the past. These are known as *historical changes*. Other events may be important but don't represent a change in how things have been done or thought about in the past. These are known as *historical continuities*.

ASSESS: Have students work in pairs to review the article and find at least two details in the text that are examples of historical continuities or historical changes. Discuss responses as a class.

EXTEND

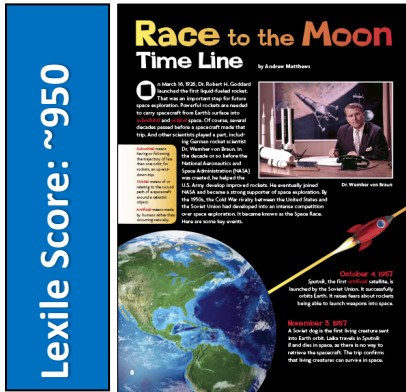
English Language Arts Have students conduct online and library research to gather information about one of the many missions to the moon that NASA sponsored. Then have them create a short multimedia presentation illustrating the causes, effects, and historical significance of the mission.

Cobblestone® Teacher Guide: July/August 2019

Race to the Moon Time Line

pp. 8–12, Expository Nonfiction

Students explore how 20th-century scientists developed ways for countries to reach and explore space.



RESOURCES

- Use Evidence Worksheet

OBJECTIVES

- Students will read and analyze a nonfiction article.
- Students will learn about the causes and effects of space exploration.
- Students will use evidence to develop a claim about the past.
- Students will use details from a text to write historical fiction.

KEY VOCABULARY

- **rocket (p. 8)** a type of very powerful engine that can propel a spacecraft or missile to a great height or distance
- **Lunar Module (p. 10)** a small spacecraft used for traveling between the moon's surface and an orbiting spacecraft
- **inhabitable (p. 11)** suitable to live in

ENGAGE

Conversation Question: How did the space race usher in an era of historical change?

Have students share what they know about important space-related accomplishments and events. Ask students what technologies are needed to send an object or human into space. Then tell them they're going to learn about important milestones in the development of space-related technologies.

INTRODUCE VOCABULARY

Review the vocabulary words and definitions. Then have students work in pairs to write a sentence for each vocabulary word that uses the word correctly. Invite students to share their sentences. Then remind them to look for these words as they read the article.

READ & DISCUSS

Have students read the article with a partner. Then use these prompts for discussion:

1. Why did the Space Race lead to the development of space-related technologies?
2. What evidence supports the claim there was a Space Race between the Soviet Union and United States?
3. What roles did Projects Mercury, Gemini, and Apollo play in the development of space-related technologies?

SKILL FOCUS: Use Evidence

INSTRUCT: Remind students that the article contains evidence of the impact of the Cold War on the development of space-related technologies. Direct students' attention to page 8. Ask students to find evidence that the Cold War had an impact on the development of space-related technologies.

ASSESS: Distribute the *Use Evidence* worksheet. Have students work in pairs to use the graphic organizer to record causes and effects of events. Then have partners use evidence to develop a claim about space exploration in the 20th century.

EXTEND

Language Arts Invite students to use the timeline of events in the article to write a short historical fiction story describing the experiences of the United States' or Soviet Union's government, or their citizens, as they competed for domination of space during this period. Encourage them to incorporate realistic characters, dialogue, description, and real events in their stories. Invite students to share their work.

Use Evidence to Develop a Claim

Find Evidence Use the chart below to gather evidence about causes and effects of space exploration. Hint: You might have to infer some causes and effects based on information in the text.

Specific Event in Space Exploration	Causes of Event	Effects of Event

Develop a Claim Review the information you gathered in the chart above. Then use this information to develop a claim about space exploration during the 20th century. Note: A claim is a statement supported by evidence. Example: *The space race led to important new technologies that allowed humans to develop more advanced militaries.* Write your claim on another sheet of paper. Highlight the evidence in the chart that supports your claim.

Cobblestone® Teacher Guide: July/August 2019

What's Next for NASA?

pp. 30–33, Expository Nonfiction

Learn about the ways NASA is continuing to explore outer space, developing technologies and supporting missions that expand its understanding of environments in space.



OBJECTIVES

- Students will read and analyze a nonfiction article.
- Students will learn about the causes and effects of space exploration.
- Students will explain multiple effects of developments in the past.
- Students will conduct research.

KEY VOCABULARY

- **seismometer (p. 31)** a device that measures the movement of the earth during an earthquake
- **heat probe (p. 31)** a long, thin instrument used to measure a planet's internal heat flow
- **lander (p. 31)** a spacecraft designed to land on the surface of a planet or moon

ENGAGE

Conversation Question: How did the space race usher in an era of historical change?

Ask students to recall what they know about NASA's current objectives and missions. What goals are they trying to achieve? Then share that since NASA's beginnings, its mission has expanded far beyond its original missions of reaching outer space and sending humans into it.

INTRODUCE VOCABULARY

Review the vocabulary words and definitions. Then have students work in pairs to write a single sentence that uses all three words correctly. Invite students to share their sentences. Then remind them to look for these words as they read the article.

READ & DISCUSS

Have students read the article with a partner. Then use these prompts for discussion:

1. What types of spacecraft is NASA currently working on?
2. What goals does NASA have for the future?
3. What does NASA state is necessary to help humans explore the solar system in the future?

SKILL FOCUS: Explain Effects

INSTRUCT: Explain that historical events and developments often have more than one effect. Some effects are immediate and others occur over longer periods of time. Direct students' attention to the second paragraph on page 31. Explain that one long-term effect of the success of the Apollo missions (i.e., putting a human on the moon) was to inspire the goal of putting humans on Mars.

ASSESS: Have students work in groups to reread the article and identify at least one additional effect of the Apollo missions. Then have them decide whether the effect is immediate or long-term.

EXTEND

English Language Arts Have students conduct online and library research to learn about one of NASA's current projects. Ask students to discover the goals of the project and important details about how those goals will be achieved. Then have them write a short report to share what they learn. Encourage students to use pictures and diagrams in their reports.