

Race to the Moon!

Topic: The Space Race

Grade Level: 2-5

Subject Area: Social Studies, ELA, Science

Time Required: 60 minutes

Goals/Rationale

This social studies lesson uses the topic of the space race to develop students' historical thinking skills. By examining an elementary student's letter to President John F. Kennedy, students will place a primary source document within its historical context and use that information to interpret the source.

Students will place a primary source within its historical context to examine how Cold War tensions between the United States and the Soviet Union turned early space exploration into "the space race."

Essential Question

How does an historical narrative and timeline help us understand a primary source?

Objectives

Students will be able to:

- Use an historical narrative to interpret the historical context of a primary source.
- Place historical events in temporal order.
- Identify and correct spelling and grammatical errors in a primary source document.

Connections to Curriculum (Standards)

National History Standards

Historical Thinking Skills Standard 1 Chronological Thinking

- B. Identify the temporal structure of a historical narrative or story.
- E. Interpret data presented in time lines.
- F. Create time lines.

Massachusetts History and Social Science Curriculum Frameworks

Grade 2 Concepts and Skills: Explain the information that historical timelines convey and then put in chronological order events in the student's life (e.g., the year he or she was born, started school, or moved to a new neighborhood) or in the history of countries studied. (H)

Grade 5 Concepts and Skills: Interpret timelines of events studied. (H)

Prior Knowledge and Skills

Prepared by the Department of Education and Public Programs, John F. Kennedy Presidential Library and Museum

This is a stand-alone lesson and does not require any specialized knowledge or skills. However, it may be useful to introduce the concepts of the Cold War and space exploration by showing students a map of the United States and the former Soviet Union and images of the moon and the first moonwalk.

Historical Background

Early space exploration was fueled, in part, by the Cold War competition between the United States and the Soviet Union. Space was another venue for the two nations to demonstrate technological superiority and leadership.

Americans were shocked when the Soviet Union launched the *Sputnik* satellite in 1957, intensifying fears that the United States was falling behind the Soviet Union in technology and arms. Although the United States matched the feat with its own satellite a few months later, tensions grew when the Soviets reached another first by launching Yuri Gagarin into orbit on April 12, 1961. Although publicly congratulating the Soviet Union on achieving such a milestone, President Kennedy quickly sought ways to demonstrate American superiority. The solution: send a man to the moon. The President escalated the space program and set the goal to send an astronaut to the moon by the decade's end.

The two nations continued to mark new achievements, moving closer to the moon with each milestone. The race was on and the question became who would get there first. Ultimately, the United States prevailed. On July 20, 1969, Americans Neil Armstrong and Edwin "Buzz" Aldrin, as part of the Apollo 11 mission, became the first men to land a manned spacecraft on the moon and walk on the moon. The Soviet Union never matched the feat, choosing instead to focus on creating technology that supported unmanned moon exploration and developing a space station.

The space race captured the attention of many Americans. To illustrate how some Americans felt about the issue, this lesson features a letter written to President Kennedy by a young girl named Joan Grant. Joan's letter was written on May 2, 1961, weeks after Yuri Gagarin's historic flight, although days before Alan Shepard's suborbital flight. This letter is one of many letters sent to President Kennedy on this topic in the collections of the John F. Kennedy Presidential Library. Since the JFK Library does not have additional information about Joan Grant, this lesson models how historians interpret primary sources by using historical context and close textual analysis.

Materials

Student Handouts

- Letter to President Kennedy from Joan Grant
- "The Space Race in the 1960s" narrative
- *Race to the Moon* timeline
- *Race to the Moon* chronology game

Procedure

In this lesson, students will read a letter to President Kennedy and hypothesize what they think the letter is about. Then, they will read a short historical narrative and look at a chronology of events related to the topic of the letter. Finally, they will apply this information back to the letter

and re-evaluate their understandings of the letter and topic. Additional activities include an ELA extension and a chronology game.

Part I: Letter from Joan Grant

1. To introduce the lesson, tell students that they will be learning about the race to send the first man to the moon and hand out the student packet.
2. Have students read the letter to President Kennedy from Joan Grant either individually, in groups, or as a whole-class read-aloud.
3. After reading the letter, students can answer the questions listed on the handout individually or as a whole-class discussion. It is important to reassure students that they will not know all of the answers and that they may have many questions about Joan's letter. The second part of this lesson will help address their questions. Have students consider the following:
 - a. Who was Joan Grant? (We don't know who she was, but we can look at her handwriting, word choice, and grammar to infer that she was an elementary student. Ask students to think about how old they are and whether or not they would be able to write this letter in the same way. Do they think the letter is written by someone older or younger than they are?)
 - b. What subject is Joan writing about?
 - c. Why do you think Joan wrote this letter? (Joan wrote "Secret" at the top of her letter so this is a clue that suggests she might have felt the topic was very important.)
 - d. What questions do you have about this letter? (This is to help students realize that they are not able to fully understand the letter without additional information. Hopefully, some of their questions will be answered by the end of the lesson, but some of them will not. That is part of the nature of the study of history.)

Part II: Using Historical Context to Understand a Primary Source

1. Now that students have questions about the letter, they will use historical context to answer some of their questions. Have students read the historical narrative "The Space Race in the 1960s" and the accompanying "Race to the Moon" timeline, found in the student packet. This could be done individually, in groups, or as a whole-class read-aloud.
2. After reading the narrative, have students answer a few reading comprehension questions such as:
 - a. What was the space race?
 - b. What two nations were involved in the space race?
 - c. Which nation had early success in the space race?
 - d. Which nation sent the first man to the moon?

3. Now that students have some background knowledge about the space race in the 1960s, have students go back to Joan's letter. Using their new knowledge, have students consider the following questions about Joan's letter:
 - a. When did Joan write her letter?
 - b. Name one thing that happened in the space race before Joan wrote her letter.
 - c. Do you think that event influenced Joan's letter? If so, why? If not, why not?
 - d. What is Joan concerned with?
 - e. Now, after reading about the space race, why do you think Joan wrote the letter?
 - Is this answer different than when you answered this question before you read the historical narrative and looked at the timeline? If so, why?
 - f. Name one thing that happened in the space race after she wrote her letter.
 - g. What questions do we still have about Joan's letter?

(See additional information about the letter below to help students better understand the historical context.)

4. Explain to students that reading the historical narrative helped them to understand what was happening at the time Joan wrote her letter and why Joan might have written what she wrote. However, they may still have questions about her letter. Some of these questions might be answered if they looked at other sources. But some of these questions only Joan could answer and they can't ask Joan. Sometimes, historians can't answer all of their questions.

Additional context:

- Joan writes about a Russian plane that can go 90 days without stopping, but it is unclear what plane she is writing about. In 1961 the United States and the Soviet Union both had planes that could be refueled mid-air. It is possible, but unlikely, that the same Russian plane flew for that length of time. Joan might also be referring to *Sputnik*. The Russian satellite launched in October 1957 and was in orbit around the earth for 90 days. One other possibility is that she could be referring to Yuri Gagarin's flight, which happened just weeks prior to her letter. His flight lasted just over 90 minutes. *(This is an example of a question about the primary source that is difficult to answer without asking Joan. We can hypothesize about the answer and use evidence to support our hypothesis, but we do not have a definite answer.)*
- Joan's address is listed on the top of her letter, but the zip code is missing. Although postal codes existed for some large cities at this time, they were not enforced. The zip codes we use today were established in 1963, which was after Joan wrote her letter.
- Joan's connection between the space race and Russia suggests that her ideas were shaped within that frame, whether her information and understanding of the issue was shaped by her parents, teachers, friends, or the media. This supports the argument that Americans saw space exploration as not only a scientific achievement but as a competition between the United States and the Soviet Union.

Part III: Chronology

The last page of the student handout consists of a Race to the Moon chronology game. Students can cut out the squares and follow the directions to test their knowledge on the chronology of the space race. Students should use the timeline to check their answers.

Assessment

Evaluate students' answers to the questions on the student handout.

Lesson Extension

1. For an English Language Arts lesson extension, have students discuss the audience, purpose, and tone of this letter and think about the elements of a persuasive or advice letter. In addition, students can identify and correct the spelling and grammatical errors in Joan's letter.
2. For a lesson extension that addresses English Language Arts, current events, and science, have students examine elements of the new space policy presented by President Obama in June 2010. In this policy, President Obama echoes President Kennedy by promoting the idea that the United States should dedicate some of its resources to manned exploration of other destinations, such as an asteroid or Mars. Differing, however, from previous administrations, this new policy places an emphasis on international cooperation and collaboration in space. After learning about this policy, students could replicate Joan's effort and write their own letter to the president advising him on how to move forward in space. The 2010 National Space Policy can be found at:
http://www.whitehouse.gov/sites/default/files/national_space_policy_6-28-10.pdf.

Additional Resources

John F. Kennedy Presidential Library and Museum. (www.jfklibrary.org) The JFK Library's web site hosts a variety of related materials such as an essay on the space race, audio and text of important speeches President Kennedy gave on space exploration, and correspondence between President Kennedy and Vice President Lyndon Johnson discussing the status of the United States' space program in 1961.

NASA. (<http://www.nasa.gov/audience/foreducators/index.html>) NASA's web site provides a wide range of resources for educators on space exploration, the race to the moon, and current NASA projects.

We Choose the Moon. (<http://wechoosethemoon.org>) This web site, produced by the John F. Kennedy Presidential Library and Museum, celebrates the 40th anniversary of the Apollo lunar landing. Visitors to the site may experience the lunar landing from liftoff to landing through animation, archival photos, video, and mission audio.

The Race to the Moon!

Have you ever thought about going to the moon? We know that people can go there but when John F. Kennedy was President, no one had ever been to the moon. He knew it would take a lot of hard work, but President Kennedy told the American people that he wanted the United States to send a man to the moon.

Getting to the moon was not easy. Scientists built and tested many different machines and rockets to see what might work. It took a long time to build a spacecraft that could carry a person to the moon. During this time, a lot of people gave the scientists advice on what to do.

Joan Grant gave her advice in a letter that she wrote to President Kennedy in 1961. Read her letter and answer the questions at the end of the letter.

Letter to President Kennedy from Joan Grant, May 2, 1961

Front

Art
File
Childs
on space
consistent
secret
Joan Grant
1302 C
Santa Barbara
May 2, 1961

Dear President Kennedy,
I think you are a
verry nice President.
But I think you should
use more oil and gas
in your rockets and
airplanes.
You should try it.
Make a smaller rocket
ship and put more oil and
gas in it.

P.S. Turn the paper
over. →

Sincerely yours,
Joan Grant

Back

Art
File
Childs
on space
consistent
secret

Because the Russians
have a airplane that
can go 10 days with out
stoping. Make if you used
a person who is light
and can fit into a small
airplane or rocket it
might do the same thing
as the Russians plane did.

The Race to the Moon!

Part I: Now that you've read Joan's letter, try to answer these questions:

1. Who was Joan Grant?

Hint: We don't know who Joan Grant was. But there are a few clues in her letter that can help us.

- ★ Look at her handwriting. Do you know how to write in cursive? If so, what grade did you learn how to write like that? What grade could Joan be in?
- ★ Look at the words she used and her sentences. Would you be able to write like Joan? How old do you think Joan might be?

2. What subject is Joan writing about?

3. Why do you think Joan wrote this letter?

4. List any questions you have about this letter:

- a. _____
- b. _____
- c. _____

Part II:

Did you have trouble understanding Joan's letter? Did you have a lot of questions? In order to understand Joan's letter, we need to learn more about what happened during the time when Joan wrote her letter. To do that, read the article "The Space Race in the 1960s" and look at the Timeline. Then, answer the questions on the next page.

The Space Race in the 1960s



In May 1961, President Kennedy told Americans that he wanted to send an astronaut to the moon. No one had been to the moon and he wanted the United States to get there first. He wanted the United States to reach the moon before the country Russia reached the moon.

At this time the United States and Russia, also called the Soviet Union, raced to see who could do more in space. The two nations were fighting a Cold War against each other. In this war actions were important. Sending a man to the moon first would show that the United States was a leader in the world.

The Soviet Union started the race before John F. Kennedy became President. In October 1957 they used a **rocket** to send the first **satellite** into space. It was called *Sputnik*. People in the United States were shocked when they heard about *Sputnik* because it showed that the Soviet Union had the science to send an object to space. The United States worked hard and sent its first satellite in January 1958.

After a few years, the Soviet Union surprised the United States again. On April 12, 1961, The Soviet Union sent the first man to

space. His name was Yuri Gagarin and he **orbited** the earth one time. It took him less than two hours to go all around the earth in his **spacecraft**. Americans were worried that the Soviet Union had better **technology** than the U.S. A few weeks after Gagarin's flight, the United States sent Alan Shepard into space, but Shepard did not orbit the earth.

Since the Soviet Union was winning the space race, President Kennedy decided that the United States would try to go to the moon first. The Soviet Union had the same goal. They went back and forth with new achievements. The United States finally sent John Glen to orbit the earth in 1962. The Soviet Union sent the first woman into space and was the first country to have a person go outside of a spacecraft in outer space on a **space walk**. In February 1966 the Soviet Union came one step closer to the moon by landing the first **unmanned spacecraft** on the moon.

It looked like the Soviet Union would win the race but the United States was able to pull ahead. On July 20, 1969, two Americans, Neil Armstrong and Buzz Aldrin, landed a spacecraft on the moon and walked on the moon. The United States became the first – and only – country to have astronauts walk on the moon. The Soviet Union never landed a man on the moon. Instead, the country focused on using unmanned spacecraft to explore the moon and built a **space station**. After years of competition, the race to the moon was over.

Glossary

Rocket – a tube-shaped object filled with gases that can go into the air

Satellite – an object that is sent into space to orbit the earth

Orbit – to travel around a planet, moon, or sun.

Spacecraft – a vehicle that can go into outer space

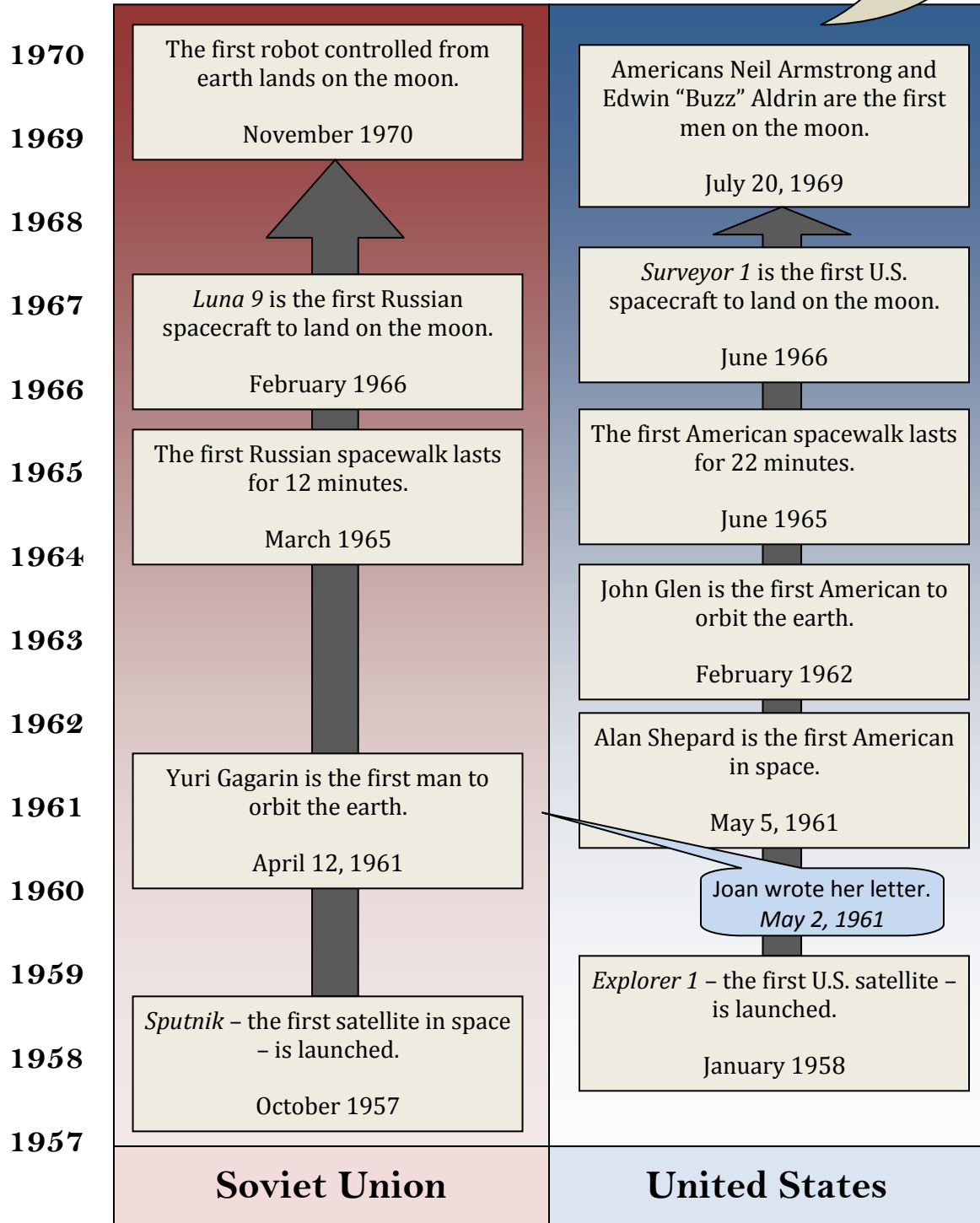
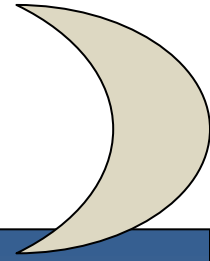
Technology – applied science

Space walk – to go outside a spacecraft in outer space

Unmanned Spacecraft – a vehicle in space without a person inside controlling it

Space Station – a structure in space that astronauts can stay in for long periods of time

Race to the Moon! Timeline



The Race to the Moon!

Part III: "The Space Race" Reading Check

1. Which country had the lead in the space race in the early 1960s? _____
2. Which country was first to send a man to the moon? _____

Part IV: Now that you know more about the space race, let's look at Joan's letter again.

1. When did Joan write her letter? _____
2. List one event in the space race that happened *before* Joan wrote her letter.

3. Do you think that event influenced Joan's letter? Why?

4. List one event in the space race that happened *after* Joan wrote her letter.

5. Now that you know more about the space race, why do you think Joan wrote her letter?

6. List any questions you still have about Joan's letter.

- a. _____
- b. _____
- c. _____

You might still have questions about Joan's letter. Some of those questions can only be answered if we asked Joan and we can't do that. However, knowing what happened at the time Joan wrote her letter helps us better understand Joan's letter.

Challenge: Joan needs your help. She did her best when she wrote to the President but Joan made a few mistakes. Find and correct any spelling or grammatical errors in Joan's letter.

Race to the Moon Chronology Game

Directions: The goal of this race to the moon is to place the events of the space race in the correct order. This game can be played with two or more players, as long as each player has a set of cards. Cut out the cards.

1. Combine and shuffle the cards from each player together in one deck and place the deck face down in the center. Taking turns, each player chooses a card from the deck and places the card face up in front of them.
2. On the next round each player picks a new card and places the new card face up in front of them either before or after the first card so that the cards are in the correct chronological order.
3. Play continues until one player has correctly ordered all 11 events. If a player places an event in the wrong order, other players must call the player out and that card goes back into the main deck. The player remains in the game. If a player chooses a card they already have, place the card back in the deck and play continues to next player. There are four “Milestones” and “Roadblocks” cards; follow the directions on each card.
4. The first player to place all of the events in correct chronological order wins.



The Soviet Union
launches *Sputnik* – the
first satellite – into
space.

The United States
sends satellite
Explorer 1 into space.

Yuri Gagarin orbits
the earth.

Alan Shepard makes a
suborbital flight.



<p>John Glen orbits the earth.</p>	<p>The first Soviet space walk lasts 12 minutes.</p>	<p>The first American space walk lasts 22 minutes.</p>	<p>The <i>Luna 9</i> spacecraft lands on the moon.</p>
<p>The United States lands a spacecraft on the moon.</p>	<p>Neil Armstrong and Buzz Aldrin walk on the moon.</p>	<p>A robot explores the surface of the moon, controlled by a team of people on earth.</p>	<p>Roadblock The Soviet Union shocks the United States by launching Sputnik. Lose a turn.</p>
<p>Milestone President Kennedy asks Congress for more money for the moon landing project. Congress agrees. Choose another card.</p>	<p>Milestone President Kennedy sends a telegram to Soviet leader Nikita Khrushchev congratulating him on Yuri Gagarin's flight. Choose another card.</p>	<p>Roadblock A broken part delays the next test on the lunar spacecraft. Lose a turn.</p>	