

New Frontiers

A newsletter for ★ educators

THE DEPARTMENT OF EDUCATION AND PUBLIC PROGRAMS AT THE JOHN F. KENNEDY PRESIDENTIAL LIBRARY AND MUSEUM

Last Chance to View the History-making Freedom 7 Spacecraft at the JFK Library!

Alan Shepard and the Spacecraft of the First Manned US Space Flight

Don't miss the last chance to see Alan Shepard's *Freedom 7* spacecraft at the John F. Kennedy Presidential Library and Museum in Boston before it returns to its permanent home at the Smithsonian's National Air and Space Museum at the end of the year. The acceleration of the space program was a top priority for John F. Kennedy when he took office in January of 1961. In written communications



A Marine helicopter picks up Mercury astronaut Alan Shepard and his *Freedom 7* spacecraft in the Atlantic Ocean after his first American sub-orbital flight on May 5, 1961.

between President Kennedy and Vice President Johnson, Johnson highlights the fact that, "Dramatic accomplishments in space are being increasingly identified as an indicator of world leadership." The issue of the United States' standing in the world was of particular importance during the Cold War with the Soviet Union. Space, therefore, was a Cold War battleground with more than scientific achievement at stake.

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"We choose to go to the Moon..." —John F. Kennedy

July 20, 2019 marks the 50th anniversary of the Apollo 11 mission and Moon landing. In 1961, President John F. Kennedy in a "Special Message to the Congress on Urgent National Needs" set the challenge of landing a man on the Moon before the end of the decade. At the time, the Soviet Union had a commanding lead in space flight. JFK understood the need to restore the nation's confidence and, with the Moon mission, he intended not merely to match the Soviets, but to surpass them. With increased funding for this policy objective, President Kennedy championed space exploration as a new frontier for human achievement and a central focus of the Cold War. On September 12, 1962, in his now-iconic speech at Rice University, President Kennedy proclaimed:

"We choose to go to the moon in this decade, and do the other things, not because they are easy, but because they are hard — because that goal will serve to organize and measure the best of our energies and skills — because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one we intend to win."

On July 20, 1969, President Kennedy's vision was fulfilled when Apollo 11 astronauts Neil Armstrong and Edwin "Buzz" Aldrin became the first men to land a manned spacecraft on the Moon and walk on the Moon. The success of this mission marked not only an accomplishment for America, but also for humanity in the exploration of space and our understanding of Earth's largest satellite — the Moon.

In this issue, the featured lesson plans explore the development of the Kennedy administration's strategy to increase funding for the initiative and an example of the public's engagement with the "Space Race" between the US and USSR. The Kennedy Library invites educators, students, and visitors to participate in a variety of special programs marking this important anniversary and highlighting the lasting impact of that mission on today's exploration of space. ★



President John F. Kennedy and NASA Astronaut John Glenn look inside *Friendship 7* at Cape Canaveral, Florida, February 23, 1962.

HIGHLIGHTS

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LESSON PLAN ★ Elementary School

Race to the Moon!

Examining the Space Program

Topic:
"Space Race"

Grade Level:
Grades 2–5

Subject Area:
US History

Goal

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.

Materials

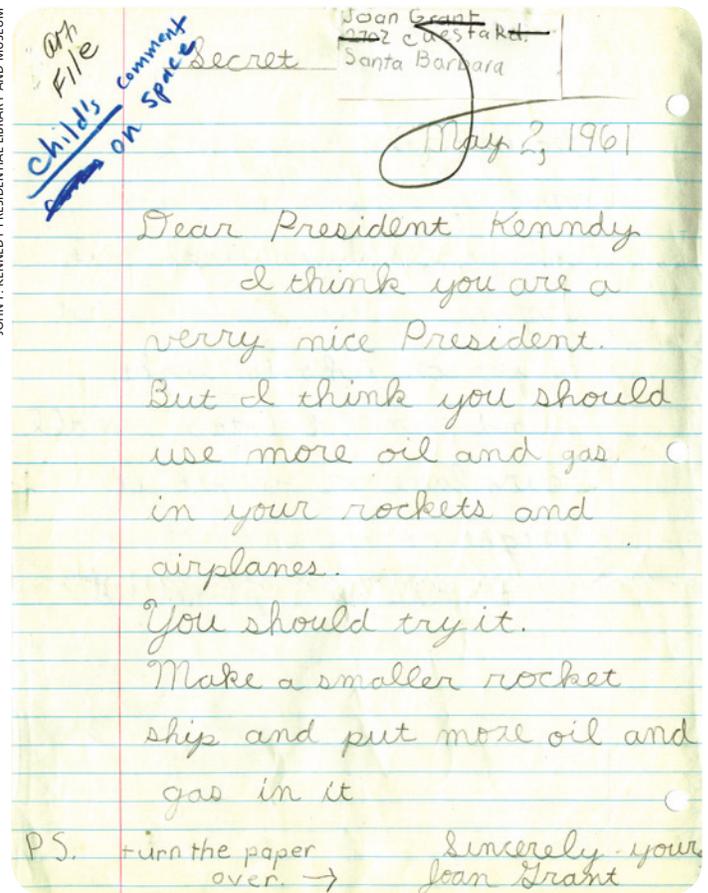
Student Handouts:

- 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*



President John F. Kennedy at Cape Canaveral, Florida, November 16, 1963.

JOHN F. KENNEDY PRESIDENTIAL LIBRARY AND MUSEUM



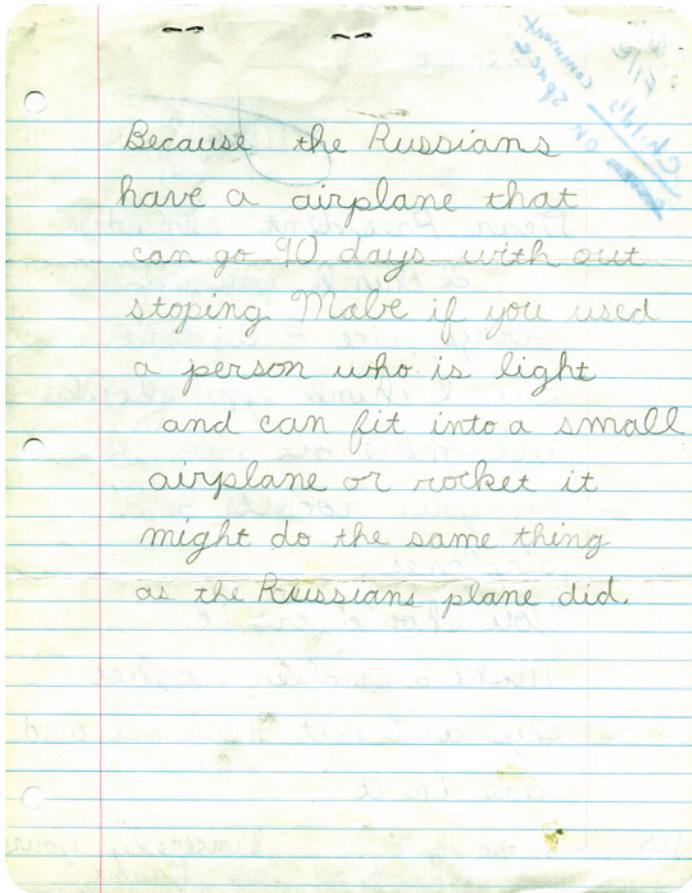
A letter from Joan Grant to President Kennedy about the "Space Race," May 2, 1961.

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 understanding 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. 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 letter from Joan Grant to President Kennedy about the "Space Race," May 2, 1961.

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? If not, why not?
 - 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 own questions.

For the complete lesson plan, including detailed Common Core and national standards, and ties to new Massachusetts History and Social Studies Curriculum Frameworks, *The "Space Race" in the 1960s* narrative, *Race to the Moon Timeline*, and *Race to the Moon Chronology Game*, assessment, and additional resources, visit jfklibrary.org/learn/RaceToTheMoonLesson. ★

- a. Who was Joan Grant? (We do not 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*

LESSON PLAN ★ High School

Kennedy's Quest: Leadership in Space

On April 12, 1961, Soviet cosmonaut Yuri Gagarin became the first human to orbit the Earth. Knowing that the US had been falling behind the Soviets in space exploration at a time when leadership in space was seen as a sign of technological superiority, the Kennedy Administration set its sights on surpassing the Soviets.

President Kennedy appointed Vice President Lyndon Johnson Chairman of the National Space Council. He asked the vice president to meet with other members of the Council to come up with recommendations about how the US could beat the Soviets in the “Space Race.” The vice president’s recommendations were incorporated in a speech on “Urgent National Needs” that President Kennedy gave on May 25, 1961 before a joint session of Congress in which he requested significant appropriations for a Moon mission.

In this lesson plan, students do a close reading of four primary sources related to the US space program in April and May 1961, analyzing how and why public statements made by the White House regarding space may have differed from private statements made within the Kennedy Administration.

Materials

All materials available with the complete lesson plan at jfklibrary.org/learn/LeadershipInSpaceLesson.

- Brief Reading: *The Kennedy Administration and the “Space Race”*
- April 12, 1961 telegram from President Kennedy to Nikita Khrushchev (bit.ly/2K4OSkj)
- April 20, 1961 memo from President Kennedy to Vice President Johnson (bit.ly/2YKSagD)
- April 28, 1961 memo from Vice President Johnson to President Kennedy (bit.ly/2YGuycK)
- Excerpt from *President Kennedy’s Special Message to the Congress on Urgent National Needs*, May 25, 1961 (jfklibrary.org/archives/other-resources/john-f-kennedy-speeches/united-states-congress-special-message-19610525)

Procedure

1. For homework, have students read the following items and answer the accompanying questions.
 - *The Kennedy Administration and the “Space Race”*
 - April 12, 1961 telegram from President Kennedy to Premier Khrushchev
 - April 20, 1961 memo from President Kennedy to Vice President Johnson

Questions to be answered:

1. In the early 1960s, why was the US concerned about falling behind the Soviets’ achievements in space?
2. What event caused President Kennedy to send his April 12, 1961 telegram to Premier Nikita Khrushchev?
3. In his April 12, 1961 telegram to Premier Khrushchev, how does President Kennedy say he would like the US and the Soviet Union to work on exploring outer space?
4. What are President Kennedy’s main objectives in writing his April 20, 1961 memo to Vice President Lyndon Johnson?

JOHN F. KENNEDY PRESIDENTIAL LIBRARY AND MUSEUM. PHOTO BY CECIL STOUGHTON.



President John F. Kennedy Views Models of the Titan Rocket at Cape Canaveral Air Force Station, September 11, 1962.

Topic:
“Space Race”

Grade Level:
Grades 9–12

Subject Area:
US History

Objectives

Students will be able to:

- analyze primary sources, considering the purpose of the source, the audience, and the occasion.
- analyze the differences in the tone or content of the primary sources.
- explain the Kennedy Administration’s arguments for putting a human on the Moon by the end of the 1960s.

5. What is the main difference between what President Kennedy says in the telegram and what he says in the memo in terms of how the Americans and the Soviets should explore outer space?
 6. Why do you think President Kennedy appears to be giving two conflicting statements?
2. In class, go over the answers to the homework questions, focusing on the public and private nature of the communications.
 3. Split students into groups of 3-4, providing each group with Vice President Johnson's April 28, 1961 memo to President Kennedy. (Tell students we do not know who marked up the document—that these were the original markings of the document in the President's Office Files.)

Have students answer the following questions:

- a. How does Vice President Johnson connect the "Space Race" with the Cold War?
Answers might include: Johnson notes that other countries "will tend to align themselves with the country which they believe will be the world leader"—and major achievements in space are identified as a sign of world leadership.
- b. Why does Vice President Johnson think the US should devote significant resources to boost American achievement in space?
Answers might include: Not only do we need to show other countries our strength and leadership through space achievements, but we may miss "great technological breakthroughs" if we do not invest in space.
- c. Based on this memo, what are some main points you might include in a speech that JFK could give to Congress in order to get them to appropriate enough funds for a manned Moon mission? Have students write their own answers as bullet points.
Answers might include:
 - *Major achievements in space are identified as a sign of world leadership.*
 - *Our prestige in the world is tied to technological accomplishments.*
 - *We are currently not putting in the full effort or achieving the results we need to become the world leader in space—but we have the resources to do so.*
 - *Though we are currently behind the Soviets in space accomplishments, we are determined to move ahead.*

- *We need to allocate more resources towards the space program as soon as possible.*
- *We have a chance of putting a person on the Moon by 1966 or 1967, if we put in the resources and effort.*
- *Technological breakthroughs are possible as we work on sending a person to the Moon.*
- *We already have some proficiency in "communications satellites, meteorological and weather satellites, and navigation and mapping satellites"—and we may be able to surpass the Soviets in these areas.*
- *The cost for a manned lunar mission and for additional work on our satellites would increase current funding for NASA by about \$1 billion a year over 10 years.*

4. Reassemble as a class and discuss the responses, noting the students' bullet points on a white board.
5. Distribute the textual excerpt from *President Kennedy's Special Message to the Congress on Urgent National Needs*, May 25, 1961.
6. Play the audio excerpt of JFK's speech (bit.ly/2LXuNic, beginning at 30:48 to 38:47) and have students take notes on which of their suggested bullet points were used by the President. Tell them they will use their notes for a homework assignment.

Assessment

For homework, have students write a 1-2 page essay that compares the language Vice President Johnson used in his April 28, 1961 memo with President Kennedy's May 25, 1961 speech to Congress, including answers to these questions:

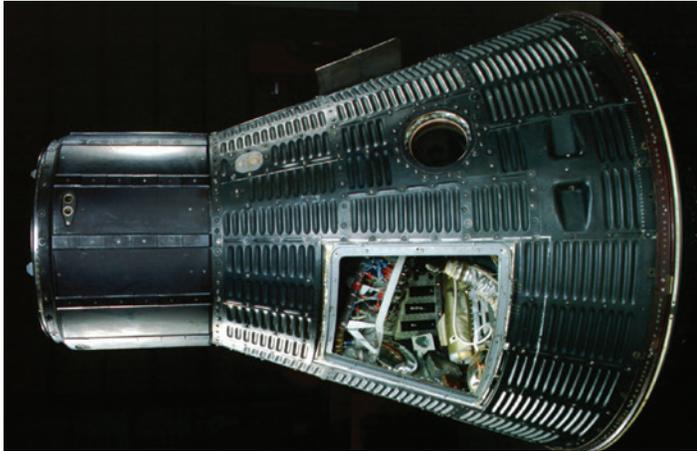
1. How are the arguments similar?
2. What are some differences between the private memo and the public speech?
3. How might the purpose, the audience, and the occasion have impacted the content of these primary sources?

For the complete lesson plan including related standards and additional resources, visit jfklibrary.org/learn/LeadershipInSpaceLesson. ★

Last Chance to View the History-making *Freedom 7* Spacecraft at the JFK Library!, *continued*

As a senator in 1958, Kennedy supported Project Mercury, the United States' first man-in-space program. By the time Kennedy took office, seven astronauts were training hard to become the first American in space. The objectives of the program, which made six manned flights from 1961 to 1963, were specifically (1) to orbit a manned spacecraft around Earth, (2) to investigate man's ability to function in space and (3) to recover both man and spacecraft safely.

SMITHSONIAN'S NATIONAL AIR AND SPACE MUSEUM



Mercury *Freedom 7* spacecraft.

The *Freedom 7* is a 9'5" tall, 6'1" diameter, 2,316-pound titanium cone capable of traveling 5,180 miles per hour at an altitude of 116 miles. Alan Shepard made history when he became the first American in space on May 5, 1961, just three weeks after Cosmonaut Yuri Gagarin orbited the Earth and placed the Soviet Union ahead in the "Space Race." One of the goals of Shepard's flight was to test the Mercury astronauts' ability to pilot the spacecraft in manual mode in the event the autopilot system failed.



NASA

Astronaut Alan Shepard, one of the original seven Mercury Project astronauts, pictured in a pressure suit, May 5, 1961.

Out of the seven Mercury astronauts, NASA chose Alan Shepard for the history-making first manned US flight. Shepard would tackle the goal of testing man's ability to function in space and pilot the spacecraft in manual mode in the event the autopilot system failed. Shepard tested the manual piloting capabilities of the spacecraft using a gear shift and a periscope to assist with navigation. Later versions of Mercury spacecraft had a window, but Shepard's craft was too heavy to include one,

Alan Shepard and *Freedom 7* Fun Facts

- Alan Shepard became the first American in space when he successfully completed a 15-minute suborbital flight on May 5, 1961, flying at an altitude of 116 miles and a speed of 5,180 miles per hour.
- The maximum height for Mercury astronauts was six feet. At 5-feet-11-inches tall, Shepard was almost too tall to qualify for the Mercury program.
- The day of his flight he had a breakfast of steak and eggs, and orange juice with his fellow astronaut John Glenn.
- The astronauts pulled pranks on each other sometimes to ease tension. When Shepard entered the cockpit of the *Freedom 7*, he found a note from John Glenn that read "no handball playing in this area."
- On the day of his flight, Shepard sat in the spacecraft for four hours while weather and mechanical problems delayed the launch.
- Unlike the Soviet flight a few weeks earlier on April 12, 1961, Shepard's flight was broadcast live on television.
- Shepard was busy during his flight. He reported instrument readings and other activities 78 times.
- Shepard sweat so much during the flight that he lost three pounds!
- On the day of his flight, he received the Distinguished Service Medal from President John F. Kennedy.
- For most schoolchildren, this was one of the few times their teacher let them watch television at school! ★

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PHOTO BY JOEL BENJAMIN



This Project Mercury hard hat was presented to President Kennedy by John Glenn after America's first successful manned orbital space flight on February 23, 1962.

so he made do with the periscope and round porthole window. When it was time to re-enter the Earth's atmosphere, he experienced a G-force of thirteen (more than twice that of an average rollercoaster), released his parachute, and splashed down in the Atlantic Ocean near the Bahamas where the *USS Champlain* was waiting to ferry him and the *Freedom 7* to dry land.

Three weeks after Shepard's flight, on May 25, 1961, President Kennedy addressed a joint session of Congress

and said "I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to the Earth." ★

Address to Joint Session of Congress, May 25, 1961:
jfklibrary.org/learn/about-jfk/historic-speeches/address-to-joint-session-of-congress-may-25-1961

Save the Dates!

Commemorate the 50th Anniversary of the Moon Landing at the Kennedy Library

President John F. Kennedy challenged the nation to land a man on the Moon before the end of the 1960s. Just eight years after his directive, on July 20, 1969, astronauts Neil Armstrong and Buzz Aldrin took the first steps on the Moon.

Upcoming Kennedy Library Forum

Watch live-streamed webcasts of Kennedy Library Forums at jfklibrary.org/webcast. If you would like to attend an upcoming forum, email educationjfk@nara.gov to reserve seats for you and your students.

NASA: From the Moon to Mars and Beyond

Wednesday, June 19, 2019 • 5:00 p.m. – 7:30 p.m.

In honor of the 50th anniversary of the Moon landing, Apollo 11 Lunar Command Module pilot **Michael Collins**, former NASA administrator **Charles Bolden**, former director of the Johnson Space Center **Ellen Ochoa**, and former NASA deputy administrator **Dava Newman** discuss NASA's past, present, and future with National Air and Space Museum director **Ellen Stofan**.

Kennedy Library Forums are made possible with generous support from Bank of America, The Lowell Institute, Gourmet Caterers, The Boston Globe, Xfinity, and 90.9 WBUR.

Full details on a daylong schedule of activities (10:30 a.m. – 7:30 p.m.) are available at jfklibrary.org/jfk-space-summit. This program is supported in part by Raytheon Company, as well as The Boeing Company, Draper, and Vertex. ★

Engagement for Visitors of All Ages

Join us for a special commemoration of the 50th anniversary of the Apollo 11 mission and Moon landing.

Saturday, July 20, 2019 • 10:00 a.m. – 4:00 p.m.

The day will include special activities and guest speaker presentations for visitors of all ages:

- Listen to special NASA guest speakers
- Meet inventors and engineers
- Learn how spacesuits keep astronauts safe
- Build and launch your own rocket
- Hold a 3-D printed star in your hand
- Make-and-take space activities
- Try the JFK Challenge App
- Test your knowledge of space trivia and much more!

This anniversary program is sponsored by Raytheon Company as lead sponsor, with additional support from The Boeing Company and Vertex.

Please visit jfklibrary.org for more information and details. ★



JOHN F. KENNEDY PRESIDENTIAL LIBRARY AND MUSEUM. PHOTO BY TOM FITZSIMMONS.

Upcoming Performance Program for Families

The Kennedy Library invites families to this special STEM program as part of the signature *Celebrate!* series.

Bright Star Touring Theatre *Jack's Adventure in Space*

Saturday, July 06, 2019 10:30 a.m. – 11:30 a.m.

Come along with Jack for an out-of-this-world adventure through the solar system! Bright Star Touring Theatre leads a journey exploring the origins of the planet names from Mercury to Neptune, and even the controversial Pluto. Learn about their physical features and fun facts about each planet's special path around the sun. *This program is supported in part by Raytheon Company.*



The *Celebrate!* program highlights American's rich cultural diversity and reflects President and Mrs. Kennedy's concern for and support of the arts and culture. With generous support from the Highland Street Foundation, the Martin Richard Foundation, and the Mass Cultural Council, all performances are free and open to the public.

Visit jfklibrary.org/celebrate for more information. ★

JOHN F. KENNEDY PRESIDENTIAL LIBRARY AND MUSEUM. PHOTO BY TOM FITZSIMMONS.



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*The Kennedy Library
Department of Education and
Public Programs offers free
Museum passes to teachers
considering a field trip to the
Library. Please call 617.514.1600.*

Museum Hours

Daily, 9 a.m. to 5 p.m. 
Closed Thanksgiving,
Christmas, and New Year's Day

American Studies Summer Institute • July 8-19, 2019 (weekdays) • 8:30 a.m. to 12:30 p.m.

Democracy and Its Discontents: Interpreting Controversies Over American Suffrage

Join us this summer for an intensive ten-day program of thought-provoking lectures and discussions led by distinguished scholars and practitioners. The American Studies Summer Institute, an annual program co-sponsored by the University of Massachusetts Boston American Studies Department and the John F. Kennedy Presidential Library and Museum, offers educators and graduate students the opportunity to explore in depth a rich topic with contemporary resonance drawn from American social, cultural and political history.

This year's program, held at the Kennedy Library, will explore the changing landscape of American voting over time by asking the following underlying questions:

- How have Americans historically understood enfranchisement?
- How have disenfranchised Americans asserted their claims in the public sphere? How have powerful figures confronted these challenges to their authority?

- How have controversies over "rigged" elections challenged American ideals surrounding free and fair voting?
- How have ideas about and practices of civic engagement changed over time?
- How have controversies over suffrage played out in American popular culture? How have social movements surrounding enfranchisement been energized by—and fed back into—literary, musical, and visual representations?



Participants may earn three graduate credits in American Studies. Teachers may earn graduate credits or PDPs. **Registration deadline is June 14, 2019.** To register, download a registration form at jfklibrary.org/SummerInstitute. For further information, please call the Kennedy Library Department of Education and Public Programs at **617.514.1647**. ★

Additional support for the John F. Kennedy Presidential Library and Museum's history and civic education programs is provided by Kenneth R. Feinberg & Camille S. Biros, of The Law Offices of Kenneth R. Feinberg, PC and:

