

Apollo: To the Moon

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by Mary Hall Surface

Audience: Students in grades 3-8

Additional Resources:

21st Century Explorer, National Aeronautics and Space Administration (NASA)
<https://education.jsc.nasa.gov/explorers/index.html>

All About NASA Astronauts, National Aeronautics and Space Administration (NASA)
<https://www.nasa.gov/astronauts>

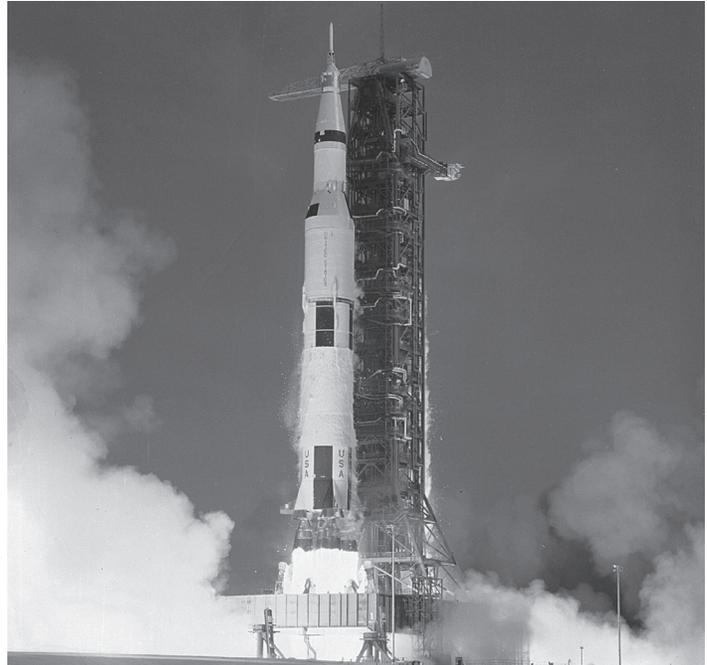
Apollo Program, National Aeronautics and Space Administration (NASA)
https://www.nasa.gov/mission_pages/apollo/index.html

History of Space travel, National Geographic for Kids
<http://kids.nationalgeographic.com/explore/space/history-of-space-travel/#space-first-space-suit.jpg>

Hubble Space Telescope Science Institute,
<http://hubblesite.org/>

Spot the [International Space] Station, National Aeronautics and Space Administration (NASA)
<https://spotthestation.nasa.gov/sightings/>

What was the Apollo program? National Aeronautics and Space Administration (NASA)
<https://www.nasa.gov/audience/forstudents/5-8/features/nasa-knows/what-was-apollo-program-58.html>



Apollo 11 Saturn V space vehicle July 16, 1969 -- The Apollo 11 Saturn V space vehicle lifts off with astronauts Neil A. Armstrong, Michael Collins and Edwin E. Aldrin, Jr., at 9:32 a.m. EDT July 16, 1969, from Kennedy Space Center's Launch Complex 39A. Image credit: NASA

Share in the excitement of America's race to the moon in this nationally acclaimed drama. Science, technology, engineering, and mathematics (STEM) merge with the arts and history in this one-of-a-kind performance that follows Scott Gibson, a young astronomer, who dreams of becoming an astronaut in the historic Apollo space program.

Gain insight into the "space race" between America and the then-U.S.S.R.; learn about other social and political topics of the 1950's and 1960's, such as the Vietnam War and the Civil Rights Movement; and enjoy popular music from that fast-changing era of American history. This one-man, multimedia performance also features original downlink broadcasts from space and over 100 photographs from the National Aeronautics and Space Administration (NASA). So stow your backpacks, fasten your seatbelts, and get ready to blast off with Virginia Repertory Theatre's *Apollo: To the Moon*.

NASA Missions Today

In the play, Scott's ultimate space dream is to travel to the moon. Today, NASA astronauts are involved in missions well beyond our own moon. In small groups, use Internet resources to research the NASA missions below. Record notes on what you learn. Then follow the guidelines at the bottom of the page to make an informative brochure about your NASA mission.

Group 1 International Space Station

Group 2 Juno: Mission at Jupiter

Group 3 New Horizons: Pluto and Beyond

Group 4 Cassini Mission at Saturn

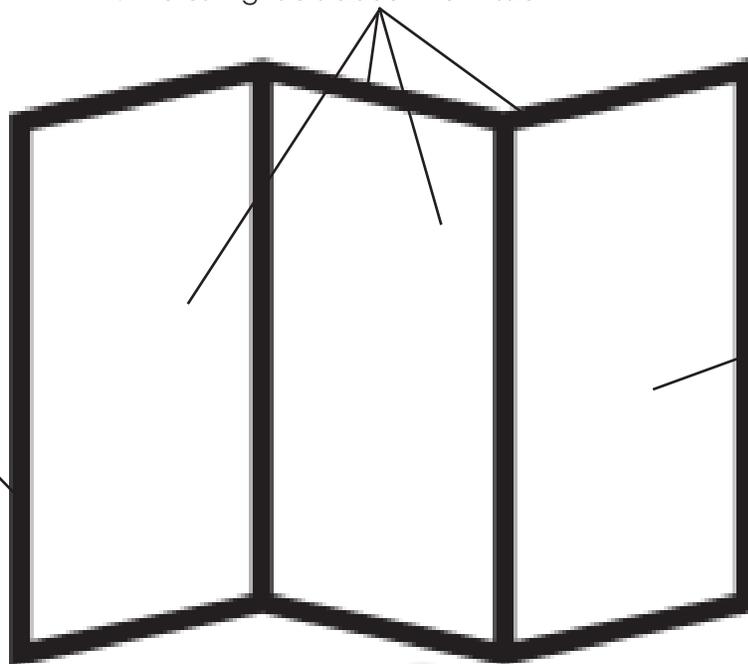
Group 5 Curiosity Mars Rover

Group 6 Hubble Space Telescope

INSIDE: Include information about the following on the four interior pages of your brochure:

1. Mission overview and goal
2. History of the mission
3. What is happening now with the mission
4. Interesting facts about the mission

BACK: Include the names of all group members. Include a list of at least three books or websites where someone could go to learn more.



COVER: Include a drawing to represent the mission and the name of the mission.

Analyzing Primary Source Material

The following is an excerpt from John F. Kennedy's "Moon Speech," given at Rice University in Houston, Texas on September 12, 1962. A speech is an example of primary source material. Read the excerpt below, and complete the activity on the following page.

There is no strife, no prejudice, no national conflict in outer space as yet. Its hazards are hostile to us all. Its conquest deserves the best of all mankind, and its opportunity for peaceful cooperation may never come again. But why, some say, the moon? Why choose this as our goal? And they may well ask why climb the highest mountain? Why, 35 years ago, fly the Atlantic? Why does Rice play Texas?

We choose to go to the moon. 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 which we intend to win, and the others, too.

It is for these reasons that I regard the decision last year to shift our efforts in space from low to high gear as among the most important decisions that will be made during my incumbency in the office of the Presidency.

In the last 24 hours we have seen facilities now being created for the greatest and most complex exploration in man's history. We have felt the ground shake and the air shattered by the testing of a Saturn C-1 booster rocket, many times as powerful as the Atlas which launched John Glenn, generating power equivalent to 10,000 automobiles with their accelerators on the floor. We have seen the site where the F-1 rocket engines, each one as powerful as all eight engines of the Saturn combined, will be clustered together to make the advanced Saturn missile, assembled in a new building to be built at Cape Canaveral as tall as a 48 story structure, as wide as a city block, and as long as two lengths of this field.

Within these last 19 months at least 45 satellites have circled the earth. Some 40 of them were "made in the United States of America" and they were far more sophisticated and supplied far more knowledge to the people of the world than those of the Soviet Union.

The Mariner spacecraft now on its way to Venus is the most intricate instrument in the history of space science. The accuracy of that shot is comparable to firing a missile from Cape Canaveral and dropping it in this stadium between the the 40-yard lines.

Transit satellites are helping our ships at sea to steer a safer course. Tiros satellites have given us unprecedented warnings of hurricanes and storms, and will do the same for forest fires and icebergs.

We have had our failures, but so have others, even if they do not admit them. And they may be less public.

To be sure, we are behind, and will be behind for some time in manned flight. But we do not intend to stay behind, and in this decade, we shall make up and move ahead.

Read the speech in its entirety at er.jsc.nasa.gov/seh/ricetalk.htm.

Primary sources are the raw materials of history — original documents and objects which were created at the time under study. They are different from secondary sources, accounts, or interpretations of events created by someone without firsthand experience.

Source: U.S. Library of Congress

Analyzing Primary Source Material

After reading the excerpt on the previous page, answer the following:

In his speech, President Kennedy said, “We choose to go to the moon in this decade ... not because [it is] easy, but because [it is] hard....” What do you think he meant by that? What challenges are we choosing to conquer today “because they are hard?”

Why do you think it's important for people to study and analyze primary sources?

Read the speech excerpt critically. What statements did President Kennedy make that demonstrate the U.S. was in a “Race for Space” with the Union of Soviet Socialist Republics (U.S.S.R.)? _____

Extend Your Thinking:

During the “Race for Space,” the U.S. and the U.S.S.R. were locked in a battle for preeminence. Today, there is more collaboration and less competition. Read “How the World Explores Space Together,” by Caleb Wong, on the Smithsonian National Air and Space Museum website at <https://airandspace.si.edu/stories/editorial/how-world-explores-space-together>. Why do you think this change has occurred? _____

Enrichment Opportunity:

NASA's space program has resulted in many technologies that affect our everyday lives. Research what technological advances have resulted from our space programs.

Virginia Repertory Theatre
 114 W. Broad St.
 Richmond, Virginia 23220

virginiarep.org
 (804) 282-2620
 contact@virginiarep.org

Virginia Rep Presents...

Apollo: to the Moon

by Mary Hall Surface

Virginia Repertory Theatre

Nathaniel Shaw, Artistic Director
 Phil Whiteway, Managing Director
 Bruce C. Miller, Founding Producer

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Theater Etiquette



Clap, but know when to do so.

You should clap after a play, act, or song, or right before intermission. If you loved the show, you can give a "standing ovation" at the end. That's when you stand up while applauding.

It's quiet time (sort of).

If the play makes you laugh or cry, that is fine, but you can chat with your friends afterwards. Be respectful and quiet so the actors can focus on their roles. Being quiet allows the rest of the audience to concentrate on the play.

Behind the Curtains

Many people with different skills and talents work together to make a production such as *Apollo: to the Moon* come to life. Can you match these theater jobs with their descriptions?

set designer

a person who plays a role or character in stage plays, motion pictures, television broadcasts, etc.

playwright

a person who creates the look of each character by designing clothes and accessories the actors will wear in performance.

stage manager

this person's job is to pull together all the pieces and parts of a play – the script, actors, set, costumes, lighting and sound, and music to create a production.

actor

this job focuses on using light to create effects that match the mood of various scenes in a performance.

costume designer

this person is a writer of scripts for plays. The script tells a story through the actions and words of the characters.

lighting designer

this person creates the physical surroundings of a play, including any scenery, furniture, or props used throughout the play.

director

this person helps the director and helps organize the actors, designers, stage crew, and technicians throughout the production of a play.