WHEN WE LEFT EARTH: THE NASA MISSIONS
Landing the Eagle

Teacher's Guide

Grade Level: 6–12 **Curriculum Focus:** Science, Social Studies **Running Time:** 51 minutes

---

Program Description

Revisits the accomplishments of the Apollo missions and profiles the project's greatest success, landing a man on the moon. The program explores how NASA rebounded after the tragic loss of three astronauts in the *Apollo 1* disaster, as well as documents the milestones achieved by the *Apollo 8*, *Apollo 9*, and *Apollo 10* missions. Commentary from astronauts Edwin "Buzz" Aldrin, Gene Cernan, and Jim Lovell considers the unique camaraderie between the Apollo team and Mission Control, and a rare interview with Neil Armstrong presents the famed astronaut's view on *Apollo 11's* place in history.

Learning Objectives

After viewing the program and participating in discussion, students will be able to:

- Explain how a team effort given by all of NASA resulted in the success of the Apollo missions;
- Note that the moon landing could not have happened without previous Apollo missions;
- Describe how the innovative photos and images taken of Earth from the moon were the first of their kind;
- Explain how John F. Kennedy's space challenge was completed eight years after its proposal;
- Depict the first descriptions of the composition of the moon;
- Identify the rapid engineering innovations of space scientists.

Classroom Connections

The crew of *Apollo 1* was killed during a training simulation. How did NASA respond to the situation?

When Bill Anders of *Apollo 9* first saw images of our planet from the moon he said, "We came to discover the moon, but we were discovering the Earth." Explain what is meant by this quote.

Neil Armstrong said that during training for the *Apollo 11* mission he was introduced to basic geology training. He also said that this part of the training felt like it was for show and for the cameras. Why did he feel this way?

NASA astronauts were considered celebrities during the late 1960s. How are these celebrities different than what we consider a celebrity today?

Why couldn't the astronauts of *Apollo 11* initially land the Lunar Module as planned?

Neil Armstrong's famous words, "This is one small step for man, one giant leap for mankind," are legendary. Why is this saying famous? Where else have you heard these words?

Why is the placement of the American flag on the moon significant?

President Nixon was scheduled to recite a fairly long, rehearsed speech in a phone call to Neil Armstrong and Buzz Aldrin as they walked on the moon. When Nixon actually talked to the astronauts, his phone call was a short, simple congratulation. Both Armstrong and Aldrin said they appreciated that more. Why might they feel that way?

Classroom Activities

All of the Apollo missions were launched from the Kennedy Space Center. Have students work together and research the logistics of the center. Where is the center located and why is the location important? Was the center always called the Kennedy Space Center? When and why did the name change?

The rockets used to launch capsules into space used millions of gallons of fuel—for each launch! How much does it cost to fuel our cars (or parent's car)? Calculate the cost of fueling a rocket versus fueling a car. Should NASA continue space exploration with such high fuel costs? Explain. Would NASA have so many launches in the 1960s if fuel was as costly as it is now?

At one point in *Landing the Eagle*, the wives of the astronauts are interviewed. They explained the anxiety and turmoil of hoping for a safe return. What was the role of women during the 1960s? How was this role changing? Students should research what year the first woman was in space. Students should then compare their findings to the year that the first American woman traveled into space. Think of reasons for the variance.

The astronauts were surprised by the construction of the Lunar Module. The module was built using everyday materials such as adhesive tape, staples, and cellophane. The astronauts could not believe that this "flimsy" structure would be flown to the moon. Experiment with different materials and create a model of the Lunar Module. Students should think about why these materials were used. Students should also consider what materials NASA could use were it constructed today.

Neil Armstrong compared the moon's surface and environment to the high desert of the U.S. Students should research the surroundings and characteristics of U.S. deserts to better understand the surface of the moon. Students should experiment with sand and rocks indigenous to a desert.

Target Vocabulary*

module - an independently operable unit that is a part of the total structure of a space vehicle

capsule - a small pressurized compartment or vehicle

catalyst - an agent that provokes or speeds significant change or action

*By permission. From the *Merriam-Webster Online Dictionary* ©2008 by Merriam-Webster, Incorporated (www.Merriam-Webster.com.

Academic Standards

National Science Teachers Association
The National Science Teachers Association (NSTA) has developed national standards to provide guidelines for teaching science. To view the standards online, go to http://www.nsta.org/publications/nses.aspx.

This guide addresses the following standards:

- Science and Technology
- Earth and Space Science
- People, Places, and Environments
- Science in Personal and Social Perspectives
- History and Nature of Science

National Council for the Social Studies
The National Council for the Social Studies (NCSS) has developed national standards to provide guidelines for teaching social studies. To view the standards online, go to http://www.socialstudies.org/standards/strands/.

This guide addresses the following standards:

- Culture
- Time, Continuity, and Change
- People, Places, and Environments
- Power, Authority, and Governance
- Science, Technology, and Society
- Global Connections
- Individuals, Groups, and Institutions