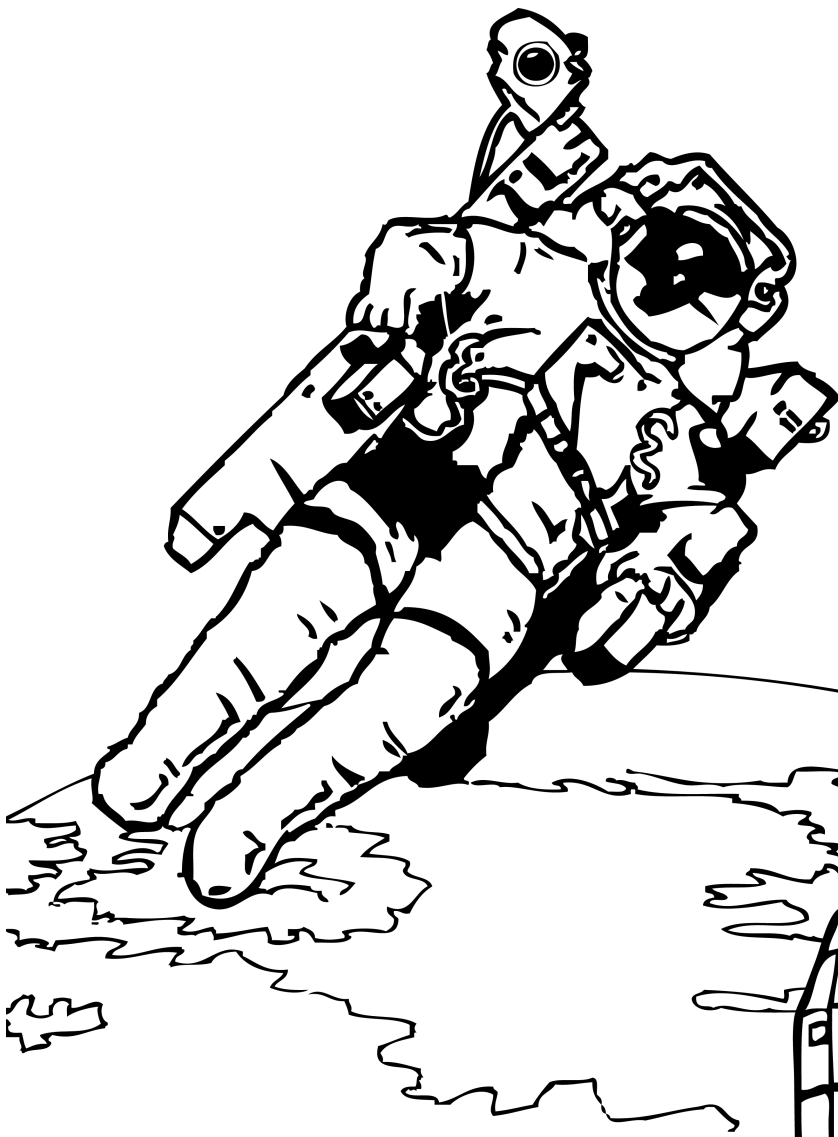
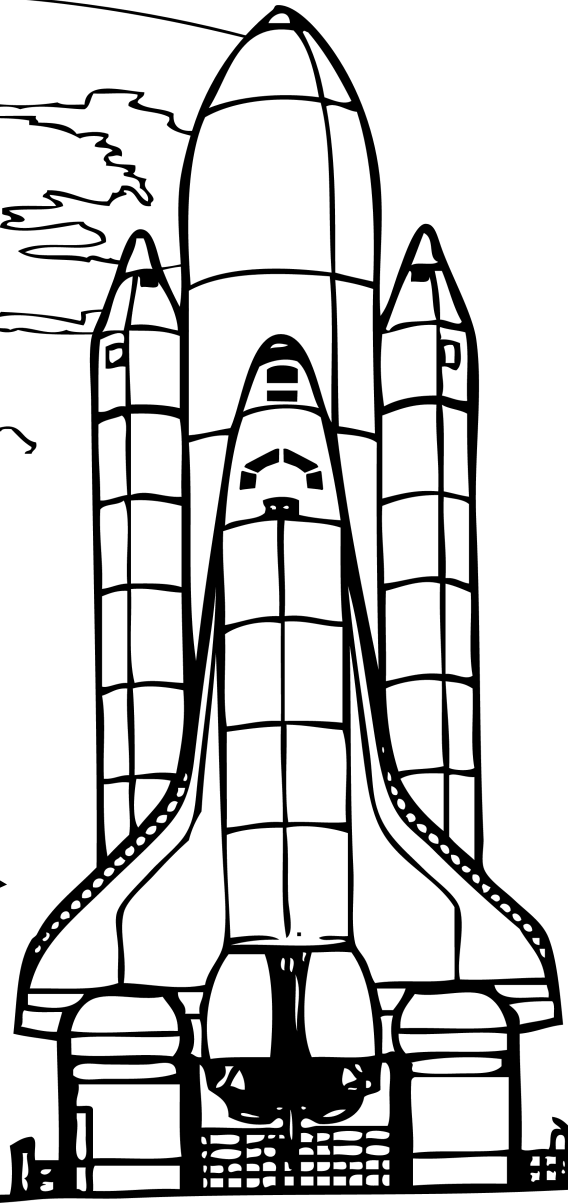


WHEN WE
LEFT EARTH:
THE NASA
MISSIONS



NAME:

PERIOD:



When We Left Earth: The NASA Missions

Episode Guide

Part 1: Ordinary Supermen

The first episode of the series documents the start of the Space Race and the flights of the Mercury Program, beginning with flight testing of the X-15 rocket plane, Alan Shepard's flight as the first American astronaut aboard Freedom 7, and John Glenn's historic flight Friendship 7 and the potentially fatal problem with the heat-shield that occurred during the second orbit. Neil Armstrong, Chris Kraft, Glynn Lunney, Gene Kranz, and NBC News space correspondent Jay Barbree are among those interviewed.

Part 2: Friends and Rivals

The second episode is centered on Project Gemini, the second American human spaceflight program. It features the first American spacewalk by Gemini 4 astronaut Ed White.

Part 3: Landing the Eagle

The third episode details the beginning of the Apollo program, starting with rocket engine testing of the F-1 engines, the Apollo 1 disaster, the flights of Apollo 8, 9, and 10, the tense lunar descent of Apollo 11, and the first human footsteps on the lunar surface. Both Buzz Aldrin and the rarely interviewed Neil Armstrong appear in the episode, as well as all of the Apollo 8 astronauts, Commander Jim McDivitt of Apollo 9, Apollo 10 astronauts Gene Cernan and John Young, and capsule communicators Charlie Duke and Bruce McCandless II and flight director Gene Kranz.

Part 4: The Explorers

The fourth episode features the five other successful moon landings - Apollos 12, 14, 15, 16, and 17, as well as the "successful failure" of Apollo 13. It also features the space station Skylab.

Part 5: The Shuttle

The penultimate episode focuses on the flights of the Space Shuttle, beginning with Columbia's maiden voyage on April 12, 1981 (the twentieth anniversary of the first human spaceflight, Vostok 1). The STS-1 crew, commander John Young, and pilot Bob Crippen, are interviewed. Bruce McCandless's untethered spacewalk on STS-41-B - the first in history - is shown digitally remastered in high-definition. The episode also documents the Space Shuttle Challenger disaster that occurred 73 seconds after lift-off on mission STS-51-L, on January 28, 1986, and the subsequent halt of the Space Shuttle program. The episode ends with the launch of the Hubble Space Telescope in 1990 on mission STS-31 and the subsequent discovery of its defective mirror.

Part 6: A Home in Space

The series' final episode centers on the first refurbishment mission of the Hubble Space Telescope, and launch, assembly, and construction of the International Space Station. Shuttle astronauts, including Scott Altman, Michael Lopez-Alegria (the US record holder for number and duration of spacewalks), Ken Bowersox, and Eileen Collins, are featured in the episode. The episode also recalls the Space Shuttle Columbia disaster that occurred during re-entry, 16 minutes from landing at the Kennedy Space Center, on mission STS-107, on February 1, 2003.

Episode # 1 - Ordinary Supermen

Project Mercury was the first U.S. space exploration program initiated by NASA. How did NASA choose the nation's first astronauts?

Space exploration had never been attempted by the NASA before. Why did the U.S. decide to research space?

The first attempts at launching rockets into space were unsuccessful. Because launching rockets and/or people had never been tried before, there were many risks. Why was space exploration still pursued despite the risks?

What were some of the reasons the medical community thought it was too dangerous to send a man into orbit? How did NASA eventually convince doctors that astronauts would be safe?

Who is Ham? How is Ham responsible for the success of Project Mercury?

Both the Soviet Union and the U.S. were rapidly pursuing space exploration. The Soviet Union was the first country to launch a person into space, but the U.S. ultimately landed the first man on the moon. Consider why the two countries worked against each other in the "space race." What are some possible scenarios that could have occurred had they worked together?

Episode # 2 - Friends and Rivals

What were the goals of the Gemini missions? Why was there more than one Gemini mission?

Explain why the Gemini missions occurred in quick succession.

The name of this episode is Friends and Rivals. Why do you think this is the title and not "Friends and Enemies?" Explain who the "friends" and "rivals" are in this episode. What is the difference between an enemy and a rival?

It takes several attempts before the first space walk is successful. What did NASA change about its training to make it successful?

Many of the initial attempts of launching a rocket into space were unsuccessful. Some rockets exploded moments after launch. Why did NASA continue to pursue space exploration despite the danger?

Episode # 3 - Landing the Eagle

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?

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?

Episode # 4 - The Explorers

What was the goal of the Apollo 12 mission? What was the goal of the Saturn 5 Rocket? Create a timeline documenting the various space missions and their purposes.

Why were there so many Apollo missions? How is each one different? Why couldn't NASA just set up the Skylab space station first?

The goal of the later Apollo missions was to collect rock samples from the moon. Why is it important for Americans to collect samples of matter from the moon? What is the ultimate goal of knowing what the moon is made of?

NASA uses the term "lunar geology" to describe the process of collecting rocks and samples of the moon. How does lunar geology differ from geology practiced on Earth? How are they the same?

Describe the role of the scientists and NASA members who were at Mission Control. How are their jobs just as important as astronauts in space during these missions?

Episode # 5 - The Shuttle

Explain the danger and risk of launching the space shuttle for the first time without having any unmanned test flights.

What is significant about designing a reusable spacecraft?

How was NASA a victim of its own success? What does that mean?

How was launching the first teacher into space supposed to boost support for NASA?

What were some of the reasons behind the Challenger disaster?

What was the purpose of launching the Hubble Space Telescope into space? Was the mission successful?

Episode # 6 - Home in Space

Until the Hubble Space Telescope was repaired, the future of NASA was uncertain. Why was it so important for astronauts to fix Hubble?

Why was it important for NASA to have experienced astronauts working on the Hubble repair mission?

What were the reasons for constructing the International Space Station?

Russian space vehicles are called Soyuz. How does this word translate to English? How is this name significant?

The final Columbia space mission was called a more “personal” mission where science experiments would be performed. At the same time as the Columbia launch, several astronauts were living in the International Space Station. How was the Columbia mission more “personal” than the work in the International Space Station?

In 2003, the Columbia disintegrated during reentry and killed the entire crew. Many people criticized NASA and expressed the desire to end the space program. In contrast to those opinions, astronauts explained how they did not share the same sentiment. What are some reasons astronauts would want to continue to pursue space travel?

In what ways has leaving Earth changed the world?