



Virtual Learning Unmanned Flight Safety and Operations

The Apollo Program

April 28, 2020



Unmanned Flight Safety and Operations

Lesson: April 28, 2020

Objective/Learning Target:

Students will learn about the history of one of the more famous/important space programs in U.S. history.



Bell Work:

What did the Apollo 11 mission accomplish?



Let's Get Started:

Watch Videos:

- [This Is How the Apollo Program Began](#)
- [Apollo's Space Mission - Space Documentary 2019](#)



The Apollo Program

The Apollo program, which was also known as Project Apollo, was the third U. S. spaceflight program carried out by the NASA. This came before the first humans landing on the Moon. The program was first conceived during Dwight D. Eisenhower's administration. The idea was a three-person spacecraft to follow the one-person Project Mercury, which put the first Americans in space.

Apollo was later dedicated to President John F. Kennedy's goal of "landing a man on the Moon by the end of this decade and returning him safely to the Earth." It was the third US human spaceflight program to fly.



The Apollo Program

Project Apollo's goals went beyond landing Americans on the moon and returning them safely to Earth. They included:

- Establishing the technology to meet other national interests in space.
- Achieving pre-eminence in space for the United States.
- Carrying out a program of scientific exploration of the Moon.
- Developing human capability to work in the lunar environment.

The Apollo Program

Apollo ran from 1961 to 1972. There was a major setback in 1967 when an Apollo 1 cabin fire killed the entire crew during a pre-launch test.

After the first successful landing, enough flight hardware remained for nine follow-on landings with a plan for an extended lunar geological and astrophysical exploration.





The Apollo Program

Budget cuts forced the cancellation of three of these landings. Five of the remaining six missions had successful landings, but Apollo 13 never made it to the moon, there was an oxygen tank explosion that destroyed the service module's capability to provide electrical power, crippling the capsule's propulsion and life support systems. The crew returned to Earth safely by using the lunar module as a "lifeboat".

Apollo used Saturn family rockets as launch vehicles, which were also used for an Apollo Applications Program, which consisted of Skylab, a space station that supported three crewed missions in 1973–74.



The Apollo Program

The Apollo program was designed to land humans on the Moon and bring them safely back to Earth. Six of the missions (Apollos 11, 12, 14, 15, 16, and 17) actually achieved this goal.

Apollos 7 and 9 were Earth orbiting missions to test the Command and Lunar Modules, and did not return lunar data. Apollos 8 and 10 tested various components while orbiting the Moon, and returned photography of the lunar surface. Even though Apollo 13 did not land on the Moon due to a malfunction, it returned with photographs. The six missions that landed on the Moon returned a lot of scientific data and almost 400 kilograms of lunar samples. Experiments included soil mechanics, meteoroids, magnetic fields, and solar wind experiments.



Apollo Program Understanding

Research the Apollo missions. Then create a timeline that includes at least 10 of the missions. This timeline should include the dates and details of the mission's purpose.