NASA is building a sustainable presence on and around the Moon as part of the Artemis Program. The journey begins with the Orion spacecraft – NASA’s next generation spaceship that will launch atop the world’s most powerful rocket to take astronauts on a journey of exploration to the Moon and on to Mars. Orion is part of NASA’s backbone for deep space exploration, along with the Space Launch System rocket and the lunar Gateway.

To protect astronauts on these long-duration missions and return them safely to Earth, Orion engineers have woven innovative technology, advanced systems and state-of-the-art thermal protection into the fabric of the spacecraft. The team behind Orion has built upon the past 50 years of space exploration experience in human spaceflight, launch operations, robotic precursor missions, in-space construction and mission management.
Launching from Kennedy Space Center in Florida

Lunar Flyby

Orion approaching the lunar Gateway

Returning to Earth at 25,000 MPH

ARTEMIS I
The first uncrewed, integrated flight test of NASA’s Orion spacecraft and Space Launch System rocket, launching from a modernized Kennedy spaceport
Artemis I

The Space Launch System rocket with Orion atop is targeted to launch from Kennedy’s Launch Pad 39B. Artemis 1 will send Orion on a path more than 40,000 miles beyond the Moon over a course of three weeks, farther into space than human spaceflight has ever traveled before. The spacecraft will return to Earth and safely splash down in the Pacific Ocean off the coast of California. The mission will advance and validate capabilities required for human exploration of Mars.
Space Launch System

The Space Launch System is a powerful launch vehicle, which will expand human presence to celestial destinations beyond low-Earth orbit and throughout the solar system. SLS is the only rocket that can send Orion, astronauts and supplies to the Moon on a single mission.

Orion Spacecraft

Launch Abort System
The launch abort system, positioned on a tower atop the crew module, can activate within milliseconds to propel the vehicle to safety and position the crew module for a safe landing.

Crew Module
The crew module is capable of transporting four crew members beyond the Moon, providing a safe habitat from launch through landing and recovery. Inside the familiar deep-space capsule shape are advances in life support, avionics, power systems, and advanced manufacturing techniques.

Service Module
Created in collaboration with ESA (European Space Agency), the service module provides support to the crew module from launch through separation prior to entry. It provides in-space propulsion for orbital transfer, power and thermal control, attitude control and high altitude ascent aborts. While mated with the crew module, it also provides water and air to support the crew.

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