

Space Shuttle



The Space Shuttle is a re-usable launch vehicle. This means that unlike normal rockets, it can land and be used again on another mission. The shuttle is a very useful tool as not only can it carry a cargo into space like ordinary rockets, but with its trained astronauts and special systems, it is able to place satellites in orbit, retrieve and repair them as well.

The first shuttle was launched in April 1981. The shuttle can carry seven crew members and a payload of 24 400 kg. Its missions in low orbit around the Earth can last up to 14 days.

The fleet currently consists of four shuttles, Columbia, Discovery, Atlantis and Endeavour. The space shuttle Endeavour replaced Challenger, which exploded on the 25th flight on 18 Jan 1986, 73 seconds after launch, killing all the crew. Space Shuttle operations did not resume until 2 years later.



The shuttle is launched into orbit with the help of a large external fuel tank and two auxiliary solid fuel boosters. These are needed to help the shuttle get into orbit as it would not manage with its own engines. As it reaches orbit these are jettisoned back into the sea where the solid fuel boosters are recovered and re-used.

In orbit the shuttle can perform a variety of missions, from simple experiments to capturing and repairing a satellite. The cargo bay of the shuttle can be opened and used by the astronauts, with the help of a large robotic arm.

The space shuttle Discovery dramatically repaired the Hubble Space Telescope in February 1997. The HST was launched with a defective mirror and the shuttle captured the satellite and installed several replacement components to compensate. Only a shuttle with human astronauts could have achieved this difficult mission.



When the shuttle returns to Earth, it lands rather like a large glider on a runway, and is repaired and made ready for its next mission.