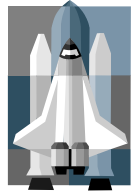


How does a SPACECRAFT take off and land?



Astronauts travel into space inside a spacecraft made up of a capsule powered by rockets. The rocket engines burn fuel which produces hot gas.

Taking off

When the spacecraft is ready to take off, the hot gas shoots out from the engines and pushes the rocket up from the ground. The force must be big enough to overcome the Earth's gravity.

The main rocket may be helped away from the launch pad by booster rockets fixed to its sides. When the rocket is going fast enough, the boosters fall away.

Staying in orbit

The rocket engines turn off when the spacecraft reaches orbit. It does not need engines to keep going in space because there is no air. This means there is no friction so the spacecraft does not slow down.

Landing

When the astronauts want to return to Earth they turn on the engines, to push their spacecraft out of orbit. Gravity then pulls the spacecraft back towards the Earth. The spacecraft may be slowed to a safe landing speed by parachutes. The space shuttle has stubby wings so that it can land on a runway like an aeroplane, but many spacecraft splash down gently into the sea.

