

Astronauts and Space Travel

In space you do not feel gravity. It is extremely cold, and there is no atmosphere to breathe or to protect you from the Sun's radiation. It takes enormous energy to get there, and you have to take everything you need with you—even the air. Outer space is an extreme environment.

The first person in space orbited Earth for less than two hours in 1957. Less than 40 years later, another astronaut spent a record-setting 438 days in space. Space travel has changed a lot since then. Between 1969 and 1972, 12 astronauts set foot on the Moon. These are the only times a human has landed anywhere other than Earth.

After leaving Earth, life support is the most important function of a space craft. It must clean the air for astronauts to breathe and provide heat. It must also protect the contents from the X-rays and other radiation coming from the Sun. All things used in space are designed for the low gravity. Tools are attached to surfaces so they do not float away. Even drinking becomes difficult. You do not think about it, but gravity keeps the drink in your glass. Without gravity, the drink floats in a ball. Meals must be eaten from containers that keep the food from floating away. Equipment must be protected from floating crumbs, too.

Gravity on Earth also makes your muscles work hard. This exercise helps the blood spread throughout your body. In space, blood does not circulate as well. Lack of exercise makes the body lose muscle and bone mass. Astronauts have to strap themselves into exercise equipment to keep fit without floating away!



Brain Stretch

What do you think are four character traits someone needs to have to become an astronaut? Justify your thinking for each character trait.



“Astronauts and Space Travel”—Think About It!

1. List 10 items you would need in space. Give a reason why you want to take each item.

2. What are the most important features to have on a spacecraft? Remember, the spacecraft has to provide everything an astronaut will need while in space.

Brain Stretch

Some of the things we use on Earth were invented for space travel. Heat cameras, insulation, multivitamins, and cordless tools are just a few examples. Use books or Internet resources to learn about one such invention. Create a demonstration to show people how to use it on Earth.