

# MYSTERIOUS SPACE

Since the beginning of mankind, human beings have been fascinated by space. With the help of rockets, space can be explored.

## ROCKETS

In order to leave Earth's atmosphere, a rocket must fly at least five miles per second. If the rocket is slower, the force of gravity will pull it back to the ground. To be able to fly so fast, the rocket needs a lot of propulsion power. This power comes from the combustion of liquid fuel. The gas created through the fuel's combustion is discharged through a jet and, thus, propels the rocket. Most rockets consist of a bunch of smaller rockets called stages. Each stage has its own fuel tank. As soon as this tank is empty, the stage is discarded or dropped from the rocket and the next stage takes over.

Once a rocket is in space, it can never return to Earth. Some parts of the rocket burn up when re-entering Earth's atmosphere. Others become space junk and float through space forever.

## SATELLITES

In addition to spaceships, space stations, and astronauts, rockets also transport satellites to space. Satellites orbit around our planet on fixed paths, defined by Earth's centrifugal and gravitational forces. They cover a distance of 1.9 miles per second. Around the clock, they watch Earth from outer space and send their data via radio to big satellite dishes on the ground. Thus, we receive a lot of useful information such as how the weather will be the next day or where a volcano is about to erupt.

## THE SOLAR SYSTEM

All planets in our solar system move around the sun on specific orbits. For a complete trip around the sun, Earth needs 365 days/a year. At the same time, Earth also rotates around its own center, and that takes 24 hours/a day.

## THE SUN

The sun is a huge ball of gas! Inside the sun, gas molecules are pressed together through very high pressure. By the fusion of the gas molecules, extreme heat is created and moves in waves towards Earth. Sunbeams need eight minutes to reach Earth. With a regular plane, you would need 17 years to travel the same distance.

## LIGHT YEARS

Since planets and stars are so far away from Earth in space, their distance is measured in light years. Light moves so much faster than even the fastest jet. Light travels at a speed of over 186,000 miles per second.

## THE MOON

The moon orbits around Earth at a speed of .64 miles per second and needs 27.3 days for a complete round trip. The distance to the moon is almost as long as running around Earth ten times. On the moon, a person is six times lighter than on Earth. The moon is the only cosmic body that a human being has ever set foot on. That person was Neil Armstrong in 1969.

## PLANET MNEMONIC

With this practical mnemonic, you can remember the order of the planets easily:

**M**y **V**ery **E**ducated **M**other **J**ust **S**erved **U**s **N**achos.

M - Mercury  
V - Venus  
E - Earth  
M - Mars  
J - Jupiter  
S - Saturn  
U - Uranus  
N - Neptune

The first letter of each word stands for a planet.