

# Out-of-this-world facts about the moon

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Image 1. The moon is about 238,900 miles from Earth. Photo by Chris Cook/Science Source

Where did the moon come from? Why do we only see one side of it? Keep reading for answers.

## **How The Moon Was Made**

Many scientists believe young Earth had no moon. A free-ranging planet hit the Earth. It destroyed most of itself. Instantly, it became vapor. The collision destroyed a big piece of Earth, too. It also became vapor. The vapor collected high above the Earth. It collected into tiny solid particles. Over time, the particles came together. They made the moon.

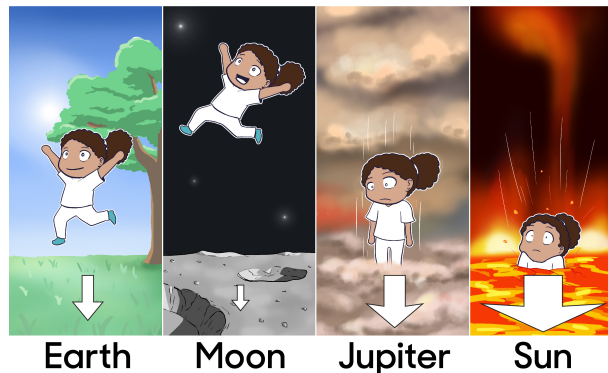
Mass is how much matter an object contains. The moon's mass is much smaller than the Earth's. It would take about 80 moons to equal the same mass as the Earth.

## **Why The Moon Changes Its Shape**

Gravity is a pull that works across open space. Things do not have to touch for gravity to work. Something's gravitational pull comes from its mass. It also comes from how big it is. The moon's gravity is only one-sixth the Earth's.

It takes the moon about 27 days to spin around one time. That's how long it takes the moon to go around the Earth, too. One side of the moon always faces us.

To people on Earth, the moon's shape appears to change. The amount of moon we see depends on the positions of the Earth, sun and moon. We see the full moon when the sun is behind the Earth. It shines on the moon's near side. The new moon is when the moon is dark. It happens when the moon is between Earth and the sun. The sun shines on the part of the moon that we cannot see.



### **Rubble Covers The Moon's Surface**

The moon can reach a temperature of 243 degrees Fahrenheit. The moon's day lasts about 30 Earth days. The moon's "night" also lasts this long. The dark side cools down to -272 degrees Fahrenheit.

The moon has no water. Sometimes comets and meteoroids hit the moon. They have water on them. Most of this water is lost in space. Some of the water is trapped near the moon's poles.

The moon is covered by rubble. The rubble comes from objects hitting the moon. The marks on the moon's surface also come from objects hitting the moon. These objects include comets. They also include meteoroids.