



Stargazers

The Solar System

The Solar System is made up of a collection of planets, their moons and smaller objects such as dwarf planets, asteroids, meteoroids and comets that orbit the Sun. There are eight planets in the Solar System: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

The four planets closest to the Sun are called terrestrial planets and are made up almost entirely of rock. These are Mercury, Venus, Earth and Mars. The four planets furthest away from the Sun are called Jovian planets and are mostly made up of gases, such as hydrogen and helium. These are Jupiter, Saturn, Uranus and Neptune.



Night and day

Night and day occurs because the Earth rotates on its axis. As the Earth rotates, the part of the planet that faces the Sun experiences light and daytime. The part of the Earth that faces away from the Sun experiences darkness and night-time. When viewed from above the North Pole, the Earth rotates anti-clockwise, which is why the Sun always rises in the east and sets in the west.

The Sun

The Sun is a star at the centre of the Solar System. The diameter of the Sun is about 1.4 million km. Its surface temperature is about 5500°C and its core temperature is about 15.5 million°C. The Sun is important because it provides light, heat and energy so that plants and animals, including humans, can live on Earth.

Gravity

Gravity is a force that pulls objects toward each other. On Earth, gravity pulls all objects towards its centre and keeps everything on the ground. Gravity also keeps the Moon in orbit around the Earth and the planets in orbit around the Sun.

Isaac Newton (1643–1727)

Isaac Newton formed his theory of gravity when he watched an apple fall from a tree. A newton (N) is a unit of measurement that is used to measure the pull of gravity.

Galileo Galilei (1564–1642)

Galileo Galilei was an Italian scientist and inventor who proved that the Earth orbits the Sun. In 1609, Galileo invented a telescope that he used to observe sunspots that appeared to move across the Sun's surface. He also observed the craters and mountains on the Moon and discovered the four moons orbiting Jupiter.

The Moon

The Moon is a natural satellite that is 384,400km away from Earth. It orbits the Earth every 27 days. The surface of the Moon is covered with craters. There is no atmosphere or life on the Moon. The Moon reflects the light of the Sun and looks different every day, depending on how much of the reflected surface is seen from Earth. These differences are known as phases of the Moon.



Phases of the Moon