

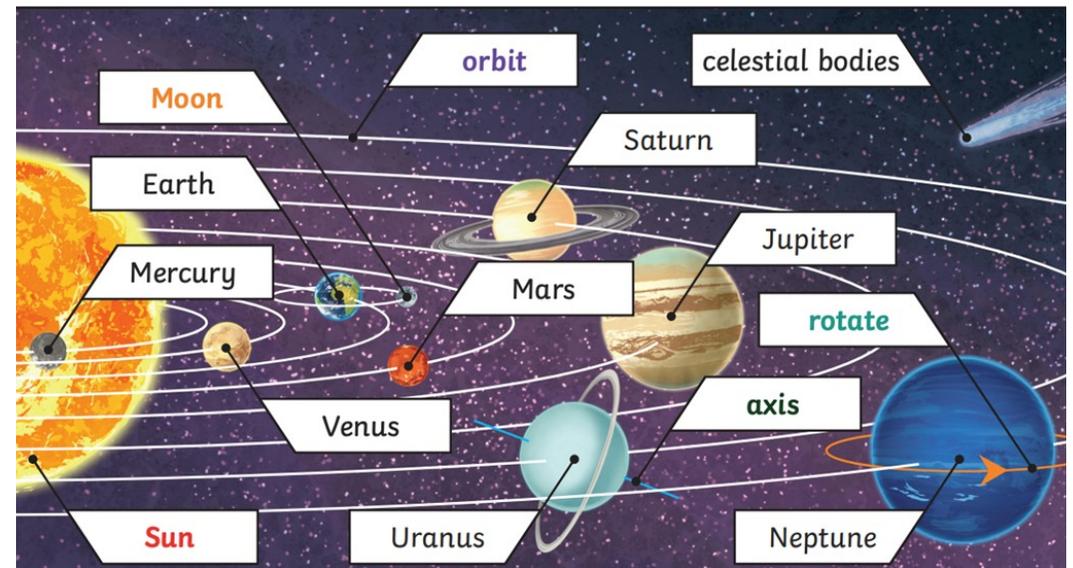
Vocabulary

Word	Meaning
asteroid	A rock that orbits the Sun in a belt between Mars and Jupiter.
axis	An imaginary line through the middle of the Earth around which it rotates.
comet	A bright object with a long tail that travels around the
sphere	An object that is round in shape like a ball
Sun	The star located at the centre of the Solar System
spin	Turns quickly around a central point
galaxy	An extremely large group of stars and planets. Our galaxy is called the Milky Way.
gravity	The force which causes things to be pulled towards the centre of the Earth / a planet.
leap year	A year which has 366 days. The extra day is the 29th February. There is a leap year every four years
meteorite	A rock from outer space that has landed on Earth.
orbit	The curved path in space that is followed by a planet, moon, or star
planet	A large, round object in space that orbits around a star.
shadow	A dark shape on a surface that is made when something blocks the light.
Solar System	The Sun and all the planets that go round it
star	A large ball of burning gas in space

The Solar System

- There are 8 planets in our Solar System (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune). Pluto is a dwarf planet.
- They all orbit the Sun, which is a star, and they all have moons.
- The first four planets are relatively small and rocky, while the four outer planets are gas giants (Jupiter and Saturn) or ice giants (Uranus and Neptune).
- There are also asteroids, meteoroids and comets in the Solar System.
- The Solar System is in a galaxy called the Milky Way.
- The galaxy is in the universe.
- A useful mnemonic for remembering the order of the planets is:

My Very Educated Mother Just Served Us Noodles



Day and Night

The Earth rotates on its axis anti-clockwise and makes a complete rotation over 24 hours (a day). This makes it appear as the Sun moves through the sky but the Earth's rotation causes day and night.

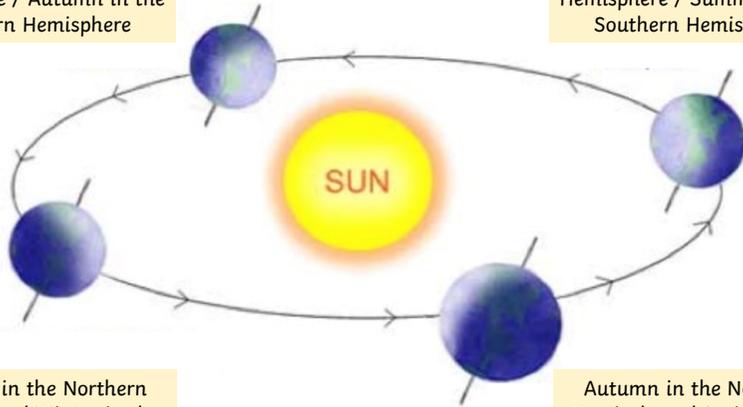
Different parts of the Earth experience daylight at different times - this means that it is morning, afternoon and night in different places. This is also the reason why we have time zones.

Because of the Earth's tilt, the poles experience 24 hours of sunlight in the summer, and very few hours of sunlight in the winter.

As the Earth rotates, shadows that are formed change in size and orientation.

Spring in the Northern Hemisphere / Autumn in the Southern Hemisphere

Winter in the Northern Hemisphere / Summer in the Southern Hemisphere



Summer in the Northern Hemisphere / Winter in the Southern Hemisphere

Autumn in the Northern Hemisphere / Spring in the Southern Hemisphere

The Year and Seasons

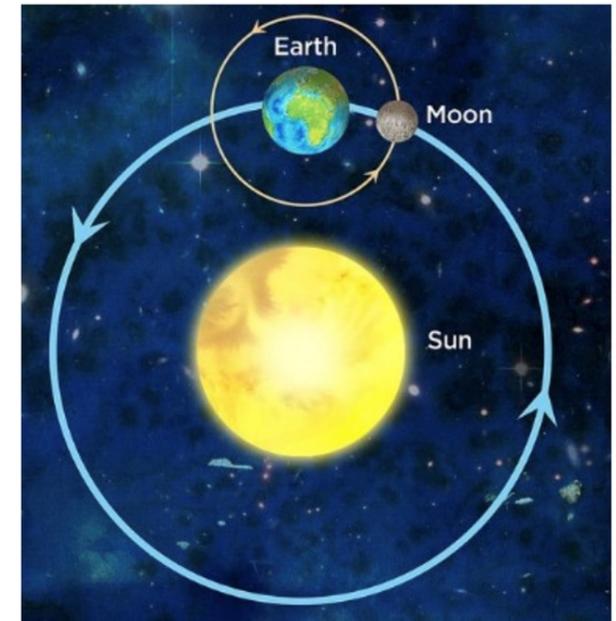
- The Earth takes 365 and a quarter days to orbit the Sun.
- Because of the extra quarter day it takes to orbit the Sun, every four years on Earth is a leap year!
- It is the Earth's tilt that causes the seasons.

Science

The Moon

- The Moon orbits the Earth anticlockwise and takes approximately 28 days.
- The Moon spins once on its axis every time it orbits Earth. This means that we only see one side of the Moon.
- The Moon has different phases depending on where it is in its orbit.
- The Moon's gravity causes high and low tides on Earth.

Earth and Beyond



Extending your learning

- Most of the experiments done in class can be repeated at home with materials around the house. Other relevant experiments can be found at <https://www.jamesdysonfoundation.co.uk/> with a series of challenge cards.
- The Science Museum is a wonderful place to explore space and the first lunar landing, the wonder lab is especially good with trained volunteers and hands on experiments. <https://www.sciencemuseum.org.uk/home>.
- Next door at the Natural History Museum there are great exhibits and a wonderful 3D representation of the Earth.
- Why not investigate?
 - Compare the time of day at different places on Earth.
 - Construct shadow clocks and sundials.
 - Keep a Moon diary over the course of a month - what do you notice?

Year 5 Autumn Term