

Earth and Beyond

Year 5 Term 1

Science

What do I already know?

We have four seasons on Earth:

- **Spring** is warmer than winter so things start to grow like flowers on plants and leaves on trees. New animals are born. Spring months are March, April and May.
 - **Summer** is the warmest season. We have more sunlight in the summer (up to 16 hours). Summer months are June, July and August.
 - **Autumn** is cooler than summer and there is less light. Leaves begin to change colour and fall from deciduous trees. Some animals begin to hibernate. Autumn months are September, October and November.
 - **Winter** is usually the coldest season. The colder weather means that fewer plants grow and many animals are hibernating as they have less food to eat. Winter months are December, January and February.
- There are 365 days a year apart from leap years which have 366 days. A leap year happens every 4 years. A day on Earth is 24 hours long.

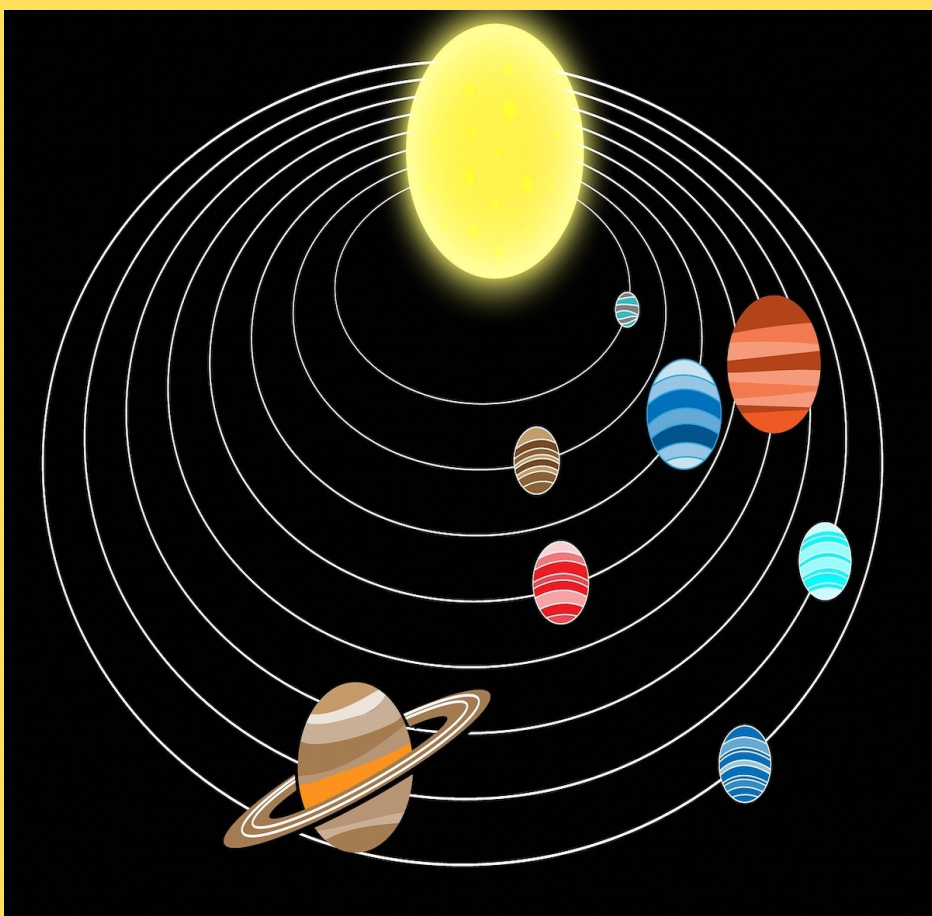
What shape is the Sun, Moon, Earth and other planets?

The **Earth, Sun, Moon** and all other **planets** are spheres. In the past, some people thought that the Earth was flat.

However, scientists first worked out that the Earth is a sphere and must curve because the top part of a ship would still be visible as it goes over the horizon, even when the bottom part has disappeared! Photos and videos taken from space have now proven that the Earth and other celestial bodies are spheres.



What is at the centre of our solar system?



Our **solar system** is **heliocentric**, which means every planet orbits the Sun, which is at the centre of the solar system. All the planets **orbit** the Sun. Each planet's orbit isn't perfectly circular; it is **elliptical**.

In the past, people thought our planet Earth was at the centre of the solar system. This was known as a **geocentric** solar system. Scientists have now proven this theory to be incorrect.

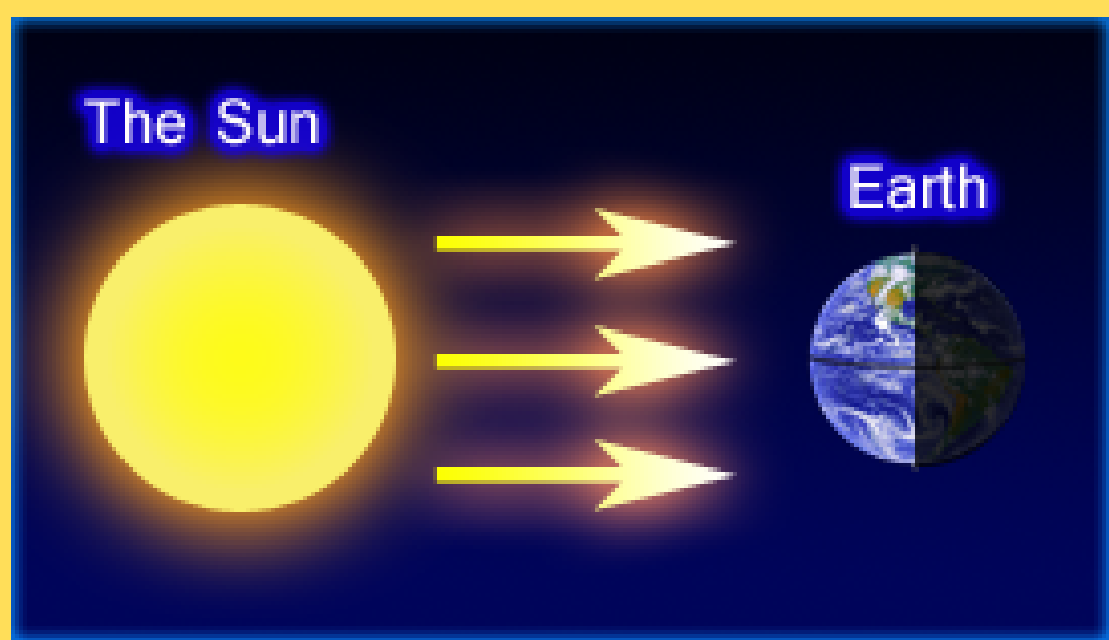




What are the planets of the Solar System?



Why do we have day and night?



The half facing the Sun is in daylight whilst the half facing away experiences night.

Earth spins on its axis which means half of our planet is facing the Sun at all times and the other half is facing away.

Vocabulary

Planet - a spherical object in space which orbits a star. It needs to be big enough to have removed any obstacles from its orbit.

Moon - a (mostly) spherical object that orbits a planet.

Star - a superheated sphere of gas that provides heat and light. Our Sun is a star.

Heliocentric - a solar system where planets orbit a star.

Orbit - when an object moves around another object, we say it orbits. The Earth orbits the sun, for example.

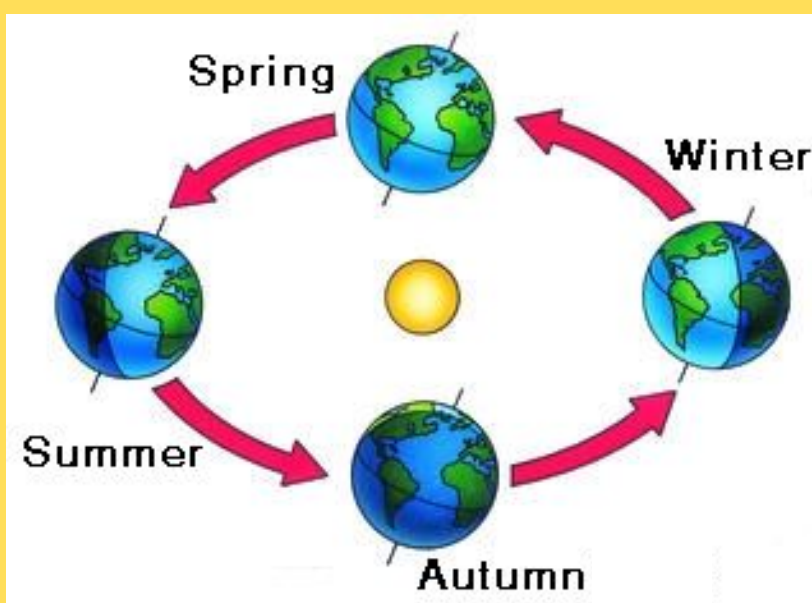
Day - the time it takes for a planet to spin once on its axis.

Year - the time it takes for a planet to orbit a star once.

Phases of the Moon - throughout a lunar month (28 days) the Moon appears to change shape.

elliptical -

Why do we have seasons?



Because the Earth is tilted on its axis, different parts receive more sunlight throughout the year. When the Northern Hemisphere is tilted towards the Sun, they have summer. When it is tilted away, they have winter.

Why does the moon appear to change shape?



The Moon takes 28 days to orbit Earth. As it orbits, different parts are facing the Sun. We see different amounts of the lit up half of the moon which makes it look like it changes shape. In fact, half of the Moon is always lit up whilst the other half is dark, like Earth.