



## Forces - Earth and Space

### Prior Year 3 Learning:

In Year 3, we learned to:

- recognise that some forces can act at a distance.
- recognise patterns in the way that shadows change.
- notice that light is reflected from surfaces.
- recognise that shadows are formed when a light source is blocked.

### Year 5 Learning:

In this unit we will learn to:

- describe the movement of the Earth, and other planets, relative to the Sun in the solar system.
- describe the movement of the Moon relative to the Earth.
- describe the Sun, Earth and Moon as approximately spherical bodies.
- use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

### Our Solar System



In our solar system, we have eight planets. They all orbit the sun, which sits in the centre. The planets closest to the sun are the hottest, and the planets furthest away are the coldest. Our planet, Earth, is just the right temperature for life. Earth is the only planet in the solar system that has life.



There used to be a ninth planet, called Pluto, that was even further away than Neptune. However, scientists decided it was too small and it is now classed as a dwarf planet instead.

The sun is not a planet, it is star. It is at the centre of the solar system and gives out light and heat. It's gravitational pull keeps all the planets in orbit around it.

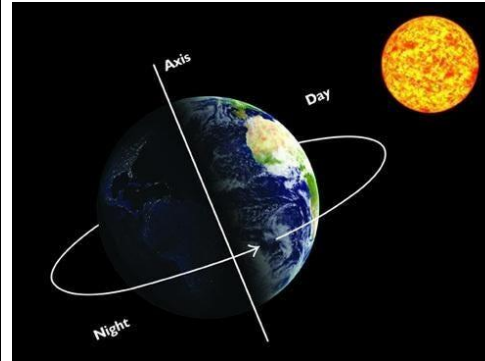
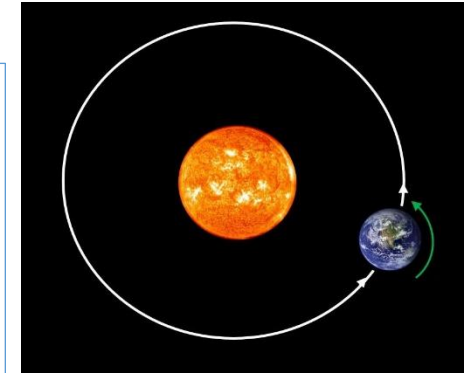


## Key Vocabulary

Planet	A celestial body orbiting round a star.
Solar system	A group of planets and other celestial bodies that orbit around a star.
Spherical body	Something that is spherical - round like a ball.
Celestial body	A naturally occurring object in space.
Star	An exploding ball of burning gas held together by gravity.
Geocentric model	A geocentric model of the universe is one that places Earth at a fixed position in the middle, while the rest of the universe orbits and moves around the Earth.
Heliocentric model	A heliocentric model involves the Earth and other planets orbiting the Sun, which is in the centre of the solar system.
Day	The time of light between one night and the next
Night	The time between dusk and dawn when there is no sunlight.
Rotate	To move in a circle around its own axis.
Orbit	The curved path of an object around a particular point in space.
Phases of the moon	The different shapes of the Moon that we see at different times of the month.

## Movement in Space

Planets in the solar system orbit the Sun due to its gravitational pull. The planets also rotate (spin) on their own axis. The Earth orbits the Sun once every 365 days (1 year). The Earth rotates on its axis once every 24 hours (1 day).



Once every 24 hours, the Earth rotates on its axis. When we are on the side of the Earth that is facing the Sun, it is day time and we have daylight. When we are on the side facing away from the sun, it is night time and we are in darkness.

Throughout history, people have believed many things about the movement of planets in space. In the geocentric model of the solar system, people thought the Earth was at the centre of the solar system. In the heliocentric model (which scientists now use) the Sun is at the centre of the solar system.

