Key Vocabulary		
Axis		An imaginary line that an object rotates around, e.g the Earth's axis runs from the North Pole to the South Pole.
Atmosphere		Envelope of gases surrounding the Earth or another planet.
Earth		A planet and the only astronomical object known to support life.
Elliptical		Moving in an oval shape.
Geocentric	 	The structure of the Solar System where the Earth sits at the centre and the planets & Sun orbit it.
Gravity		A pull force that keeps the planets in orbit around the Sun & the planets/ star in a spherical shape.
Heliocentric	 	The structure of the Solar System where the Sun sits at the centre and the planets orbit it.
Orbit		To move in a regular, repeating curved path around another object.
Planet		A spherical ball of material held together
Rotate		To move in a circle around a point.
Solar System		System of the Sun and the objects that orbit it being held together by gravity.
Star/ Sun		An exploding ball of gas held together by its own gravity. The star at the centre of the solar system.
Tilt		How an object slopes in a given direction.

How is life on Earth affected by the movements within the Solar System?

Key Knowledge:

The Sun is the star in our Solar System & contains nearly 99% of the material in the Solar System.

The Sun & planets are spherical in shape.

The Earth is one of the planets that orbits the sun in the solar system.

Earth rotates on its axis once in every 24 hours.

At the same time that the Earth is rotating, it is also orbiting around the Sun.

It takes 365 $\frac{1}{4}$ days (a year) for the Earth to orbit the Sun.

Daytime occurs when the side of the Earth is facing towards the Sun.

Night occurs when the side of the Earth is facing away from the Sun.

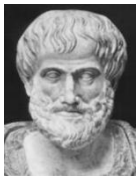
Due to the Earth tilting on its axis, the length of the day changes throughout the year as does the intensity of the Sun's rays; this results in the different seasons.

The Moon orbits the Earth.

The Moon is a sphere but 'appears to be a different shape at various times of the month when the Sun lights up different parts of it.

Working Scientifically	
	How has our understanding of the Solar System changed over time?
	How does the length of our shadow change across the day?
	How is a planet's type, size, number of moons and temperature linked to its place in the Solar System?

Scientists like Aristotle determined that the Earth was a sphere as early as the time of the ancient Greeks (350BC) People made further early discoveries about the Solar System using telescopes.



The first telescope was invented in 1608.
Galileo developed the use of the telescope to study space.

Types of planets:

Terrestrial: made up of mostly heavy materials such as rock so have a solid surface.

Gas Giant: made up mostly from hydrogen & helium. Outer layers are in gas form but further inside the gas has been compressed to a liquid.

Ice Giants: made from heavier materials than the gas giants but do not have solid surfaces.

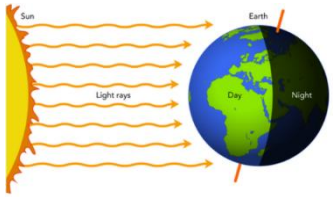
Planet Patterns:

Terrestrial planets are closest to the Sun and the Ice Giants are furthest away.

The terrestrials are smallest in diameter and the Gas Giants are largest in diameter.

The further from the Sun, the colder the temperature of the planet.

The Earth rotates on its axis every 24 hours, creating day and night.

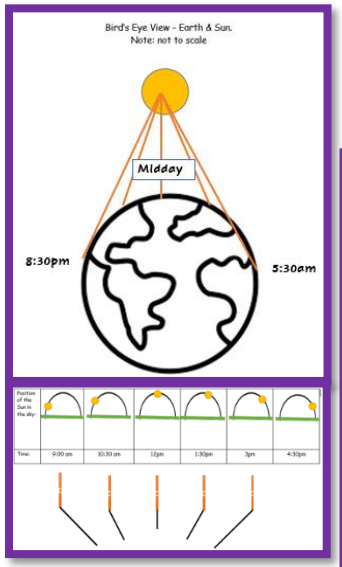


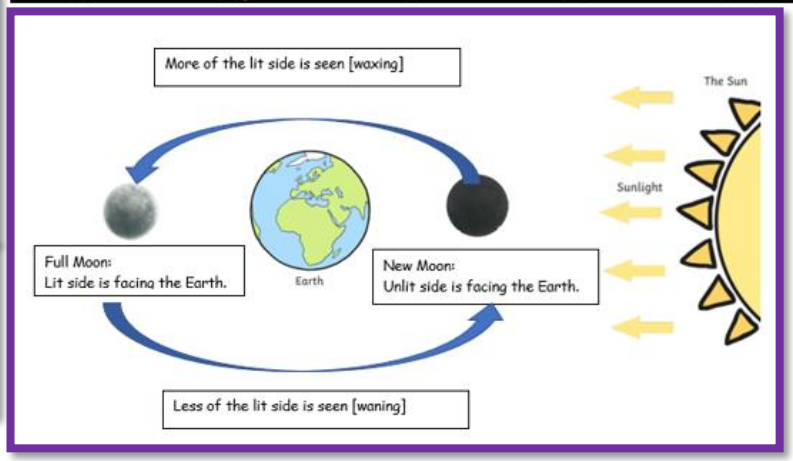
It appears that the Sun moves across the sky during the day, changing the length of the shadows objects make as the light is blocked.

The Sun does not move. It is the Earth that is moving.

When the sun 'rises' to its highest point, the shadows it creates shorten.

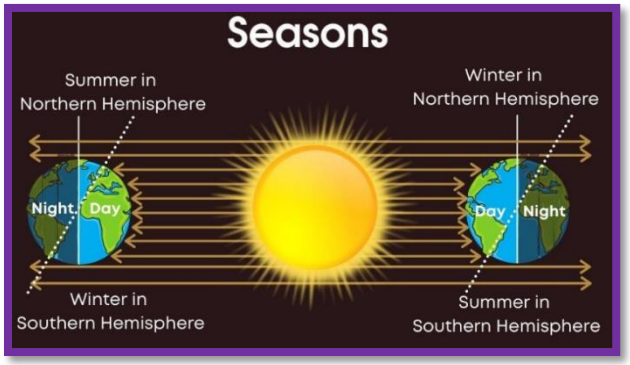
As it 'sets', the shadows start to lengthen.





The Lunar Cycle:

The Moon is not a light source. It does not create its own light. We only see the Moon because it reflects light from the Sun. At any one time, half the Moon is being lit by the Sun and the other half is in darkness. As the Moon orbits the Earth, we can see all, some, or none of the Moon that is being lit by the Sun at the time. This causes the Moon's appearance to change as viewed from Earth.



Seasons:

The Earth also orbits around the Sun, a journey that takes 365 $\frac{1}{4}$ days. The Earth being tilted means that different parts of the Earth are tilted towards the Sun at different points of the year.

We are in the Northern hemisphere. When this is tilted towards the Sun, we get more sunlight so the days are warmer and longer (it is summer). The Sun's rays are hitting the Earth where we live more directly.

When tilted away, the Sun's rays are hitting where we are less directly so it is colder and the days are shorter (it is winter).