



Year 5  
Topic: Earth and Space  
Strand: Physics

### What I should already know.

- We have four seasons (autumn, winter, spring and summer).
- The Sun is a source of light but the Moon is not.
- A **shadow** is caused when an object blocks light from passing through it.
- The properties of a **sphere**.

### What will I know by the end of the unit?

#### The Moon

- The Moon **orbits** the Earth anticlockwise and ~~takes~~ 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.

#### What is 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**.

## Vocabulary

<b>Asteroid</b>	A rock that orbits the Sun in a belt between Mars and Jupiter.
<b>Axis</b>	An imaginary line through the middle of something.
<b>Comet</b>	A bright object with a long tail that travels around the Sun.
<b>Galaxy</b>	An extremely large group of stars and planets. Our galaxy is called the Milky Way.
<b>Gravity</b>	The force which causes things to drop to the ground.
<b>Leap year</b>	A year which has 366 days. The extra day is the 29th February.
<b>Meteorite</b>	A rock from outer space that has landed on Earth.
<b>Orbit</b>	The curved path in space that is followed by an object going round and round a planet, moon, or star.
<b>Planet</b>	A large, round object in space that moves around a star.
<b>Shadow</b>	A dark shape on a surface that is made when something stands between the surface and a light source.
<b>Solar System</b>	The Sun and all the planets that go round it.
<b>Sphere</b>	An object that is round in shape like a ball.
<b>Spin</b>	Turns quickly around a central point.
<b>Star</b>	A large ball of burning gas in space.

## Diagrams



The Earth **orbits** the Sun.  
The Moon **orbits** Earth.



When the Moon passes between the Sun and Earth, the **shadow** cast by the Moon falls on the Earth's surface and we would no longer be able to see the Sun. This is called a **solar eclipse**.



## What will I know by the end of the unit?

### What causes 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.

### Year length and the 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.

