



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** 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

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

