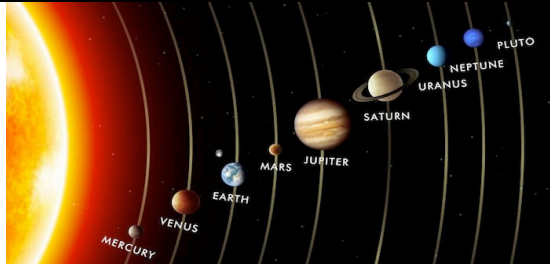


Key Knowledge

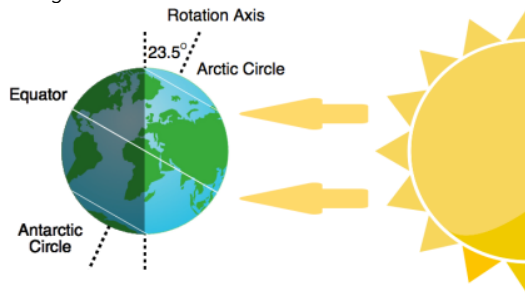
What is the solar system?



- 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 (a **star**) and 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 part of the **universe**.

What causes day and night?

- The Earth **rotates** on its **axis** anti-clockwise. It takes 24 h (1 day) to make a complete **rotation**.
- It appears as if the Sun moves across the sky.
- 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 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.
- As the Earth **rotates**, **shadows** that are formed change in size and orientation.

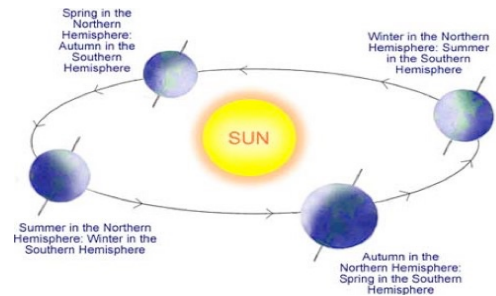


The Moon

- 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 only one side of the Moon can be seen from Earth.
- The Moon has different phases depending on where it is in its **orbit**.
- The Moon's **gravity** causes high and low tides.

Year length and the seasons

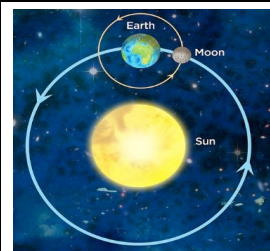
- The Earth takes 365.25 days to **orbit** the Sun.
- Because of the extra quarter day, every fourth year on Earth is a **leap year!**
- The Earth's tilt causes the seasons.



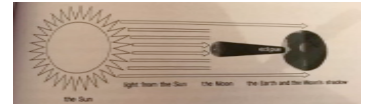
Investigation

Compare the sizes of the Sun, Earth and Moon and planets. How do shadows change throughout the day?

Diagram



The Sun, Earth and Moon are approximately **spherical**. The Earth **orbits** the Sun. The Moon **orbits** Earth.



When the Moon passes between the Sun and Earth, the Moon blocks the Sun and casts a **shadow** on the Earth's surface. This is called a **solar eclipse**.

Key Vocabulary

Axis	An imaginary line through the middle of something.
Galaxy	An extremely large group of stars and planets. Our galaxy is called the Milky Way.
Gravity	Force that makes objects fall to the ground.
Orbit	The curved path in space that is followed by an object going round a planet, moon or star.
Planet	A massive, spherical object that orbits a star.
Shadow	A dark shape created when something blocks light from reaching a surface.
Solar system	The Sun and all the planets that go round it
Sphere	An object that is round in shape, like a ball.
Rotate / Spin	Turn quickly around a central point.
Star	A large ball of burning gas in space.
Time zone	The Earth is divided into 24 time zones. Each represents 1 h before or after the zone next to it. Times are referenced to Greenwich Mean Time (GMT).
Universe	The whole of space and all the stars, planets and other forms of matter and energy in it.