

# Science, Year 5 - Out of this World

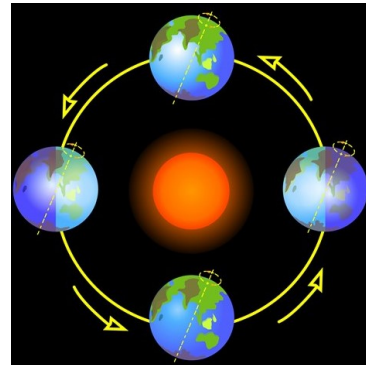
## Learning Objectives -

National Curriculum Link: Earth and Space.

- 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.
- Research the Sun, Earth and Moon - 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.

## Working Scientifically Skills -

- Plan different types of scientific enquiries.
- Take measurements and use a range of equipment.
- Record data and results.
- Use tests to make predictions.
- Report and present findings including conclusions.
- Identify scientific evidence.



## What should I already know?

- We have 4 seasons (Autumn, Winter, Spring and Summer)
- The Sun is a source of light but the moon is not.
- How shadows are formed.

## Scientific Vocabulary -

**Asteroid:** A rock that orbits the Sun.

**Axis:** An imaginary line through the middle of something.

**Comet:** A bright object with a long tail that travels around the Sun.

**Daytime:** when part of the Earth is in daylight.

**Galaxy:** An extremely large collection of stars and planets.

**Gravity:** The force that makes things drop to the ground.

**Geocentric:** (Earth-Centred) the Earth is at the centre of the Solar System.

**Heliocentric:** (Sun-Centred) the sun is at the centre of the Solar System.

**Meteorite:** A rock from outer space that lands on Earth.

**Night-time:** The time when part of the Earth is in darkness.

**Orbit:** The path of a planet or moon around another celestial object.

**Planet:** A celestial body that orbits a star, is round and has cleared smaller objects away from its orbit.

**Solar System:** A series of planets that orbit a star.

**Star:** A large ball of burning gas in space.

**Sun:** The star at the centre of our Solar System.

**Time zone:** A geographical region where the same time is

## Equality and diversity -

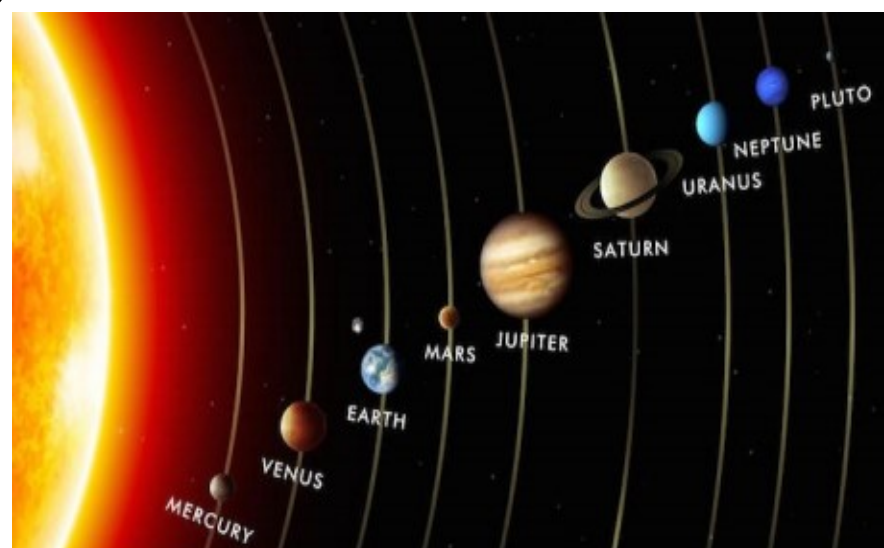
On October 18th 2019, the first all female spacewalk was conducted by Jessica Meir and Christina Koch.

Valentina Tereshkva was the first female in space.

Mae Jemison was the first black woman in space.

Sheikh Muszaphar Shukor was a Malaysian astronaut who prays in space.

In 2017, Johanna Lucht became the first Deaf engineer to take an active role in a NASA control center during a crewed research flight.



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

**What causes day and night**

- The Earth rotates anti-clockwise on its axis and takes 24 hours to make a complete turn.
- The sun often looks like it is moving through the sky but it is the Earth's rotation.
- Different parts of the Earth experience night and day at different times resulting in different time zones.

**Year length and the seasons**

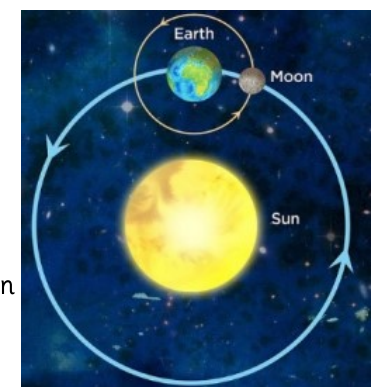
- The Earth takes 365 and a quarter days to orbit the Sun.
- The extra quarter day is the reason we have a leap year every 4 years.
- The Earth's tilt causes the seasons.

**How the planets in the Solar System are organised**

- There are 8 planets in the Solar System - Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Pluto is a Dwarf Planet.
- They all orbit the Sun and all have moons.
- The Solar System is in the Milky Way Galaxy. The Galaxy is in the Universe.

**How to describe the motion of the Earth and Moon around the Sun**

- The Sun, Earth and Moon are approximately spherical.
- The Earth orbits the Sun.
- The Moon orbits the Earth.
- A solar eclipse happens when the Moon passes between the Earth/Sun and casts a giant shadow on the Earth.



**How the Moon orbits around the Earth**

- The Moon orbits the Earth anti-clockwise and takes 28 days.
- The Moon spins once on its axis every time it orbits - we only ever see one side of it.