# **Year 5 Science**

# **Physics: Space**

## What we already know:

- We have four seasons (autumn, winter, spring and summer).
- The Sun is a source of light, but the Moon is not.

The solar system

- Know that a **shadow** is caused when an object blocks light from passing through it.
- To know the history of space travel.

The properties of a sphere.

### What's next?

The sun is a natural light source (Year 6)

The Sun can be used to create electricity by transferring through solar panels (Year 6)

The Earth

# The Sun, Earth, Moon, and other planets are approximately spherical bodies.

The Solar System is a collection of planets, moons, and the Sun.



The Sun is a star which releases heat and light.



The Sun is at the centre of the Solar System.



## There are eight planets that orbit the Sun.



The Planets

Mercury, Venus, Earth and Mars all have solid surfaces.



Jupiter, Saturn, Uranus and Neptune have gas surfaces.



Pluto is considered a dwarf planet.



# Modelling/ Motion of the earth and planets

Scientific models are physical representations of ideas or processes.

Models can be created in different ways to represent the Solar System and planets.



The Sun is the largest object in the Solar System and has the greatest gravitational pull. This keeps all the planets in orbit around the Sun.

The Earth takes 365 days, or one year, to complete one full orbit.

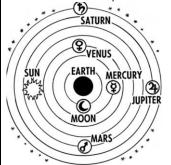
Other planets take different amounts of time to complete a full orbit around the Sun. This is relative to their distance from the Sun.

# The solar system- Ideas over time

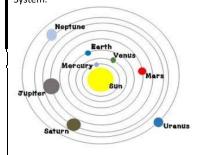
Different scientists and mathematicians have contributed to our understanding of the Solar System over time.



It was initially thought that the Earth was at the centre of the Solar System.



Through scientific advances, we now know that the Sun is at the centre of the Solar System.



## The Earth's axis is an imaginary line (that is slightly tilted) that runs from the North to the South Pole.



The Earth rotates once around its axis in a 24-hour period.

Earth is the only known planet to support plant and animal life.

The four seasons occur on planet Earth because the Earth's axis is tilted.



## The moon/ Night and Day

The Earth has one Moon, and it takes approximately 27 days for the Moon to orbit the Earth.



Without the Earth's gravitational pull, the Moon would float into space.

When part of the Earth faces the Sun, it is day. When part of the Earth faces away from the Sun, it is night.



Vocab

Tier One

Sun

Planet Moon

Space

### **Tier Two**

The Solar System - A collection of the eight planets and their moons, which orbit the

Orbit – The path an object takes around another object, for example the Earth goes around the Sun.

Model - A physical representation of an idea or process.

**Gravitational pull** – The force of attraction towards the centre of a planet or the Sun. Spherical - Shaped like a sphere.

Axis - An imaginary line that runs from the North Pole to the South Pole. The Earth's axis is slightly tilted.

**Rotation** – The spinning of the Earth around its axis. The Earth rotates once every 24 hours.

Satellite - An object that orbits a planet or

### Tier Three

Geocentric

Heliocentric