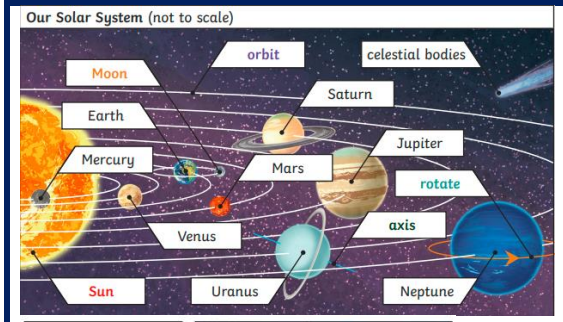
Key Learning

Pupils should be taught to:
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.
Describe the sun, Earth and moon as approximately 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.

Science: Earth and Space ROSES Yr 3/4/5

Morda CE Primary School

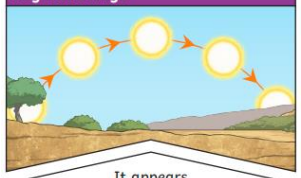
Key Knowledge



Pluto used to be considered a planet but was reclassified as a dwarf planet in 2006.

The Moon orbits Earth in an oval-shaped path while spinning on its axis. At various times in a month, the Moon appears to be different shapes. This is because as the Moon rotates round Earth, the Sun lights up different parts of it.

Key Knowledge



It appears to us that the Sun moves across the sky during the day but the Sun does not move at all. It seems to us that the Sun moves because of the movements of Earth.

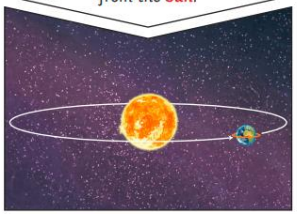
Key Scientific Vocabulary

Key Vocabulary	
Sun	A huge star that Earth and the other planets in our solar system orbit around.
star	A giant ball of gas held together by its own gravity.
moon	A natural satellite which orbits Earth or other planets.
planet	A large object, round or nearly round, that orbits a star.
sphere	A round 3D shape in the shape of a ball.
spherical bodies	Astronomical objects shapes like spheres.
satellite	Any object or body in space that orbits something else, for example: the Moon is a satellite of Earth.

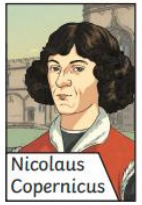
Enquiry Types

Research: flat/spherical Earth, geocentric and heliocentric models of the solar system. Name all of the planets. Describe the Sun, Earth and Moon as approximately spherical bodies by understanding how this knowledge has been attained.
Research: Describe the movement of the Earth, and other planets, relative to the Sun in the solar system by learning the order of the

Earth rotates (spins) on its **axis**. It does a full rotation once in every 24 hours. At the same time that Earth is rotating, it is also orbiting (revolving) around the Sun. It takes a little more than 365 days to orbit the Sun. Daytime occurs when the side of Earth is facing towards the Sun. Night occurs when the side of Earth is facing away from the Sun.

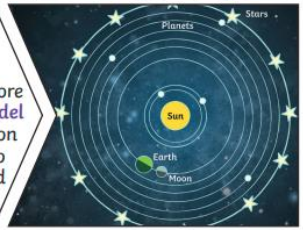


Geocentric model
Years ago people believed that planets moved around the Earth.



Nicolaus Copernicus

The work and ideas of many astronomers (such as Copernicus and Kepler) combined over many years before the idea of the heliocentric model was developed. Galileo's work on gravity allowed astronomers to understand how planets stayed in orbit.



Mercury, Venus, Earth and Mars are rocky planets. They are mostly made up of metal and rock. Jupiter, Saturn, Uranus and Neptune are mostly made up of gases (helium and hydrogen) although they do have cores made up of rock and metal.

Common Misconceptions

There are stars in our Solar System other than our Sun.
The Earth is the centre of the Solar System about which the other objects revolve.
The Solar System is the same as our Galaxy.
The Earth is the largest object in the Solar System
The Sun is not a star.
The Solar System only includes the Sun, planets, and our Moon.
Planets cannot be seen without a telescope.
Planets appear in the same place every night.
Mars is hot.
Mars is larger than the Earth.
All planets have rocky surfaces.

Key Vocabulary

orbit	To move in a regular, repeating curved path around another object.
rotate	To spin. E.g. Earth rotates on its own **axis**.
axis	An imaginary line that a body rotates around. E.g. Earth's **axis** (imaginary line) runs from the North Pole to the South Pole.
geocentric model	A belief people used to have that other planets and the Sun orbited around Earth.
heliocentric model	The structure of the Solar System where the planets orbit around the Sun.
astronomer	Someone who studies or is an expert in astronomy (space science).

plants and how they move in the solar system. **Research** - Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky by predicting night and day in different places on Earth. **Research** - Report and present findings from enquiries, including conclusions, in oral and written forms. **Identifying** – Identify scientific evidence that has been used to support or refute ideas or arguments in the context of how ideas changed from a flat earth view. **Observing over time**: Day and night (changing position of the Earth in relation to the sun).		