Earth and Space

The Big Questions

Why do the Sun and the Moon look the same size in

the sky?

Why do we see 'history' whenever we look at the stars?

Why don't we get dizzy?

Core knowledge

- The Solar System is around 4.5 billion years old
- The planets in our solar system appear in the following order from the Sun:

Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune



https://www.bbc.co.uk/bitesize/articles/zjnw4xs



https://wildabouthere.com/howto-compare-planet-sizes-teachkids/

Year 5

- As the closest planet to the sun, Mercury takes roughly three Earth months to orbit the Sun
- Jupiter, Saturn, Uranus and Neptune don't have solid surfaces. They are planets with rocky cores, surrounded by gas mainly hydrogen and helium.
- Pluto was reclassified as a dwarf planet in 2006



Earth and Space

Core Knowledge

Earth's axis is like an imaginary pole going right through the centre of Earth from "top" to "bottom."



(https://www.e-education.psu.edu)

- The four **seasons** on the Earth are caused by the Earth's axis of rotation , which is tilted at an angle of 23.5 degrees. Throughout the year, different parts of Earth get the sun's direct rays
- Earth spins on this pole, making one complete turn each day (24 hours) which is why we have day and night
- The Moon spins on its own axis and also orbits the Earth on an oval shaped path
- As the Moon orbits the Earth, the Sun shines light on different amounts of the Moon's surface which is why it looks a different shape at different times each month



(https://www.education.com/science-fair/article/determine-positions-sun-moon-earth/)

- A moon is a celestial body that orbits a planet (Earth has one, Jupiter has four large moons and numerous smaller ones)
- Ideas about the Solar System have developed over time, due to the work of scientists such as Ptolemy, Alhazen and Copernicus. These have included the Geocentric Model, where Earth was considered the centre of the Universe; which gave way to the Heliocentric Model, which places the Sun at the centre.



Year 5

Key vocabulary

The Solar System — consists of the Sun and everything that orbits, or travels around, the it. This includes the eight planets and their moons, dwarf planets, asteroids, comets and other small, icy objects.

orbit— the curved path of an object in space around a star, planet, or moon. Orbits are the result of a perfect balance between the forward motion of a body in space (such as the Earth) and the pull of gravity on it from another body in space (such as the Sun).

seasons— each of the four divisions of the year (spring, summer, autumn, and winter) marked by particular weather patterns and daylight hours, resulting from the earth's changing position with regard to the sun

Geocentric model— the astronomical model in which the Sun, Moon, stars and planets all orbit Earth

Heliocentric model — the astronomical model in which the Earth and planets revolve around the Sun at the centre of the Universe.

As scientists we will

- 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.

