

Science – Earth&Space

In this unit of work the children will understand how the sun, earth and Moon are approximate spherical bodies. They will describe the movement of the Earth and Moon in relation to other bodies in the solar system and investigate how day and night happen.

In this unit children will:

- Understand the difference between a geo and a heliocentric solar system and discuss how views have evolved.
- Use the idea of the Earth's rotation to explain day and night and carry out shadow investigations.
- Observe, measure and record their own findings in investigations
- Explore time zones and relate these to the movement of the Earth and solve time problems.
- Investigate the composition of Earth and the phases of the Moon

Prior Learning

Year 3 – Light

The sun and the dangers of looking directly at it

Cross Curricular Links

Maths – Recording findings in tables/graphs

Art – Representing the solar system

Key Vocabulary

Geo solar system – Earth centred model of the solar system established by Ptolemy in the 2nd Century

Heliocentric solar system – Sun centred model of the solar system

Evolved – Developed through a gradual process

Earth's rotation – How earth moves around on its own axis

Solar – Anything relating to the sun

Composition – The way in which a whole or mixture is made up or built

Phases of the moon – The shape of the directly sunlit portion of the Moon, as viewed by Earth

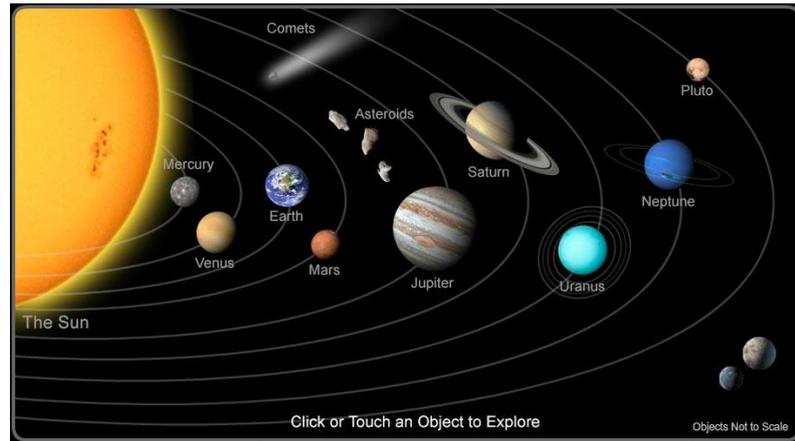
Lunar – Anything relating to the Moon

Rotation – Movement in a circle around a fixed point

Time zone – They give specific areas on Earth a time of day.

Key Knowledge

- Earth's rotation is the rotation of planet earth around its own axis, in an eastward direction.
- In western culture, the four principal **phases of the Moon** are new **moon**, first quarter, full **moon**, and third quarter (also known as last quarter)
- **Time zones** give specific areas on the Earth a **time** of day that is earlier or later than the neighbouring time **zones**. ... Greenwich Mean **Time** is now called UTC (Coordinated Universal **Time**). UTC is the **time** standard of the world.
- Our Solar System has eight "official" planets which orbit the Sun.
- Here are the planets listed in order of their distance from the Sun: **Mercury**, **Venus**, **Earth**, **Mars**, **Jupiter**, **Saturn**, **Uranus**, and **Neptune**. An easy mnemonic for remembering the order is "My Very Educated Mother Just Served Us Noodles."
- It is planet Earth that spins not the sun moving across the sky which creates day and night.
- A sundial provides roughly the correct time of day across the year.



The solar system has developed through time. The geocentric model gave way to the heliocentric model through the work of scientists such as Ptolemy, Alhazen and Copernicus.

Key Questions

- Why does the Earth rotate?
- If it is 8am in England, what time will it be in Sydney Australia?
- What order do the planets go in?
- Apart from gathering information from a book/ computer how else could we demonstrate that the Earth spins on its axis?