

The Knowledge

Supporting the National Curriculum



Knowing More Remembering More Learning More

Earth and Space

ARDLEIGH GREEN
JUNIOR SCHOOL

Year 5
Science

Phases of the Moon



We see the moon appear as **different shapes** in the sky due to how it **orbits the earth**.

The **moon is not a light source**. It is **illuminated** by the **sun**.

As the **moon moves** around the Earth, we see a greater portion of the moon which is lit up by the sun. When we see a **full moon**, we see the side of the moon **fully facing the sun**.

Key Vocabulary

Galaxy - an extremely **large group of stars** and **planets**. Our **galaxy** is called the **Milky Way**.

Gravity- the **force** which causes things to **drop to the ground** due to the **gravitational pull** being towards the **centre of the earth**.

Leap year - a year which has **366 days**. The extra day is the 29th of February

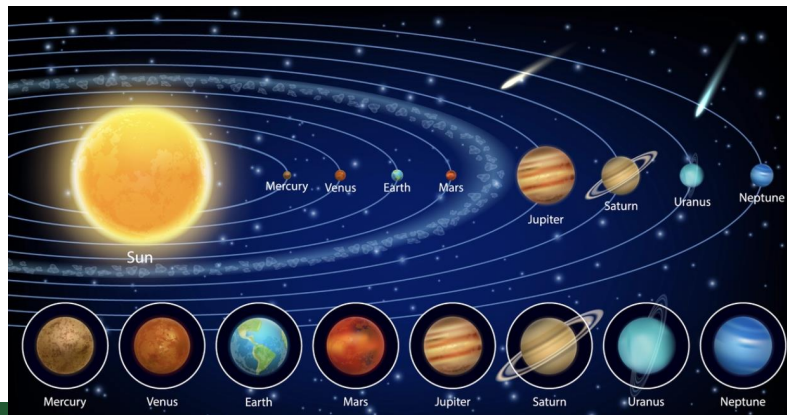
Star - A **burning mass of gas** that makes **heat and light** energy (E.g. the sun).

Planet - An **astronomical body** that **orbits a star** and does not emit its own light. They can be **terrestrial** or **Jovian**.

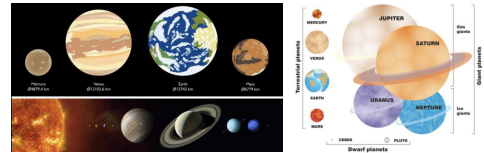
Moon - An **astronomical body** that **orbits the Earth**, and is its only **natural satellite**.

Orbit - A **curved path** of a **planet, satellite** or **spacecraft** around an object such as the sun due to the **attraction of gravity**.

The Solar System



- The **Sun** is at the centre of our solar system, and gives **heat** and **light** to our solar system. It is about **93 million miles** from Earth.
- Eight** planets **orbit** the sun. They are all roughly **spherical**, which means they are **round** and similar in shape to a ball. Some are **large**, some are **small** and some have **rings** around them. Each planet is **unique**.
- The four planets closest to the sun are **Mercury, Venus, Earth** and **Mars**. They are called **terrestrial** planets, or **rocky** planets, because they have a **solid, rocky surface**.



- Beyond Mars, are the four **gas giant planets** – **Jupiter, Saturn, Uranus** and **Neptune**. They are mostly made up of **gas** and **rock**.
- To remember the order of the planets, we can use a 'mnemonic':
My (Mercury) **Very** (Venus) **Easy** (Earth) **Method** (Mars) **Just** (Jupiter) **Speeds** (Saturn) **Up** (Uranus) **Nothing** (Neptune).

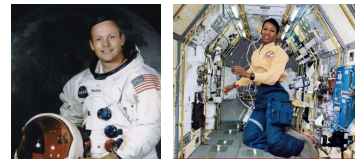
Key People



For over 100 years, astronomers believed that the **Earth was at the centre** of our solar system (**geocentric universe model**).

Around 1,300 years later, **Copernicus** was born, and later proposed the idea that the **sun was at the centre** of our universe (**heliocentric model**). His work was very **unpopular** and **banned**. 100 years later, **Galileo** backed up his theory, leading to a more **accurate** representation of the solar system.

Neil Armstrong was the first man on the moon!



Mae Jemison was the first woman of colour to go to the moon!

Test Yourself

- What is the solar system?
- What is the size and scale of the planets?
- Can you order the planets in their distance from the sun?
- How do we get day and night?
- Who was Galileo?
- What are the different phases of the moon?
- What is life like in space?
- Why is Mae Jemison inspirational?