

1. The Universe

- **The Universe** is made up of space and all the celestial bodies in it:
 - It is enormous, and nobody knows how big it is.
 - It contains billions of galaxies, stars, planets and satellites.
 - Scientists believe that the Universe was created 14 billion years ago by a huge explosion called the Big Bang.
 - After this explosion, gas and dust came together to form the first stars.
- A **star is a gigantic ball** of very hot gas. Stars can vary in size, temperature, brightness, colour and energy.
- **Stars** are grouped into galaxies.

2. The Earth is part of the Solar System

- The **Solar System** consists of the Sun and the celestial bodies that orbit it. The Sun is the star at the centre of the Solar System
- **Planets** are celestial bodies that orbit around the Sun in a circular motion. They do not have their own light. There are **eight** planets in the Solar System: **Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune**. There are also smaller planets called dwarf planets..
- As well as the planets, there are other celestial bodies in the Solar System: **asteroids, satellites, comets and meteoroids**.
- The **inner** planets are the four planets closest to the Sun: **Mercury, Venus, Mars and Earth**.
- The **outer** planets are furthest from the Sun and also the largest: **Jupiter, Saturn, Uranus and Neptune**.

3. Earth, the blue planet

- The Earth was formed approximately **4.65 billion years ago**. It is the third planet in the Solar System.
- Ancient civilisations thought the Earth was **flat** and at the centre of the Universe. This is called the **geocentric theory**. However, scientific research proved that the Earth orbits the Sun. This is the **heliocentric theory**.
- The Earth is made up of four parts: **the geosphere, the hydrosphere, the atmosphere and the biosphere**.
- Scientists have divided the Earth into three concentric layers: the **crust**, the **mantle** and the **core**.

4. The day and night cycle

- The day and night cycle is caused by a movement of the Earth called **rotation**.
- The Earth rotates on its own **axis**. This is called rotational movement. It moves from west to east in an **anti-clockwise direction**. The Earth takes **one day (24 hours)** to rotate completely. The part of the Earth illuminated by the Sun is daytime. In the other part it is night.
- The length of day and night varies during the year because the Earth's axis is **tilted**.

5. The Earth orbits round the Sun

- As well as turning on its **own axis**, the Earth moves continually around the Sun.
 - The Earth makes an elliptical or almost circular orbit around the Sun. It takes **365 days, 6 hours and 9 minutes** (a solar year) to complete one orbit.
 - The **tilt** of the Earth's axis causes the change in seasons. Due to this tilt, the Sun's rays warm the Earth differently at different times of the year. In addition, the intensity of the Sun's rays is very different in the **northern and southern hemispheres**.
 - When the Sun's rays hit the Earth's surface at a direct angle in summer, it is **hotter**. When the Sun's rays reach the Earth at a slanted angle in winter, it is **colder**.
-

6. The Moon

- The **Moon** is the Earth's only satellite. It is the brightest celestial body in the night sky.
 - The Moon rotates on its own axis and orbits around the **Earth**, which takes approximately **28 days**.
 - An **eclipse** is when the Sun or Moon is totally or partially hidden when we look at it from the Earth.
 - **Tides** are caused when the sea rises and falls due to the pull of the Moon and, to a lesser extent, the Sun.
-