

Earth and Space

In space, planet **Earth** - the planet inhabited by humans - alongside other planets, stars, moons, asteroids and other objects form our **Solar System**.

Inside the Solar System, Earth and seven other planets (including the dwarf planet Pluto) **orbit** (travel round) the **Sun** due to its **gravitational pull**. The Sun is the biggest star in our Solar System. As Earth orbits the Sun, the Moon also orbits our planet.

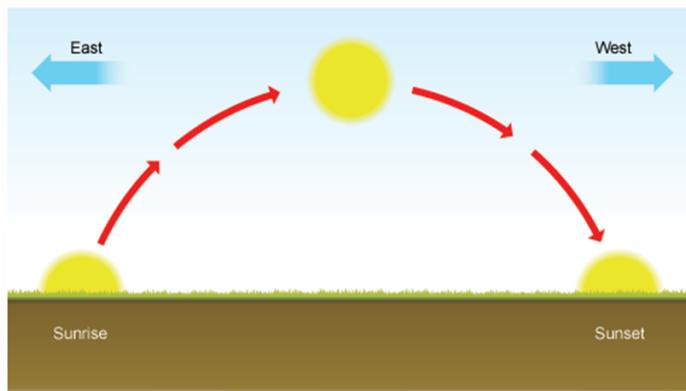
Nowadays, we know that the Earth, Sun and Moon are approximately **spherical** bodies however many years ago some people believed that the Earth was flat.

Earth's orbit around the Sun

It takes **365.25 days** to complete its orbit around the Sun, therefore every four years we have an extra day in February. When this occurs, we call it a **leap year**.

Why do we have day and night?

As the Earth orbits the Sun, it rotates meaning half of the Earth is facing the Sun whilst the other half is facing away. The part of the Earth facing the Sun will experience **day** and the part facing away will experience **night**. It takes **24 hours** for the Earth to rotate on its axis. The Sun does not move, but it is the Earth's movement that makes the Sun appear to rise in the morning from the east and set in the evening in the west.



Images sourced from BBC Bitesize

The Phases of the Moon

The Moon takes **28 days** to orbit the Earth. We call this the **lunar month**. The Moon is not a light source and simply **reflects** the light from the Sun. The Moon also does not change shape, instead we see different amounts of the Moon's surface depending on its position in relation to the Earth and the Sun. These changes in the amount we can see are called the **phases of the Moon**.

During each lunar month, the Moon starts off unilluminated (**New Moon**). As more of the Moon becomes illuminated (lit up), it becomes a **Full Moon** and then back to unilluminated again. This process is continuous.



Waxing occurs after New Moon and before a Full Moon as more of the Moon illuminates.

Waning occurs after a Full Moon and before a New Moon as less of the Moon is illuminated.

True or False?

1. The Sun is a planet.
2. Earth and other planets orbit the Sun because of gravity.
3. It takes 365 and a quarter days for the Earth to orbit the Sun.
4. A leap year occurs every four years.
5. The Sun is the biggest star in our Solar System.
6. The Sun moves in the sky.
7. It takes 28 days for the Earth to rotate on its axis.
8. The Moon is a light source.
9. A Full Moon occurs when the Moon is fully illuminated.
10. Waning occurs when more of the Moon illuminates.

Quick-fire Quiz

1. What is the Sun?
2. Why does the Earth orbit the Sun?
3. What shape did some people believe the Earth was in the past?
4. How long does it take for the Earth to orbit the Sun?
5. From what direction does the Sun appear to rise?
6. Where does the Moon reflect light from?
7. How long does it take for the Moon to orbit the Earth?
8. What is the start of a lunar month called?
9. What do we call a Moon that is fully illuminated?
10. What can we see at the end of a lunar month?