

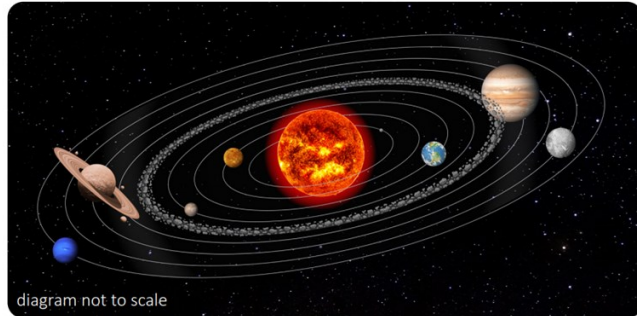


Science

Earth & Space - Advent 2

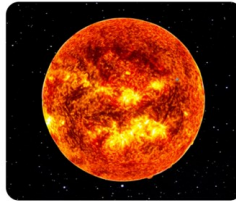
The Solar System

The Solar System consists of eight planets that orbit around the Sun.



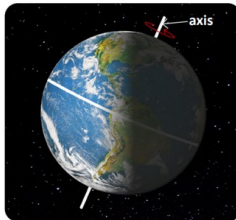
The Sun

The Sun is a 4.5 billion-year-old star. It is a huge, hot ball of gas that rotates on its axis once every 27 Earth days. The Sun is the only source of light and heat in the Solar System. Without it, life as we know it would not exist on Earth.



The Earth

The Earth is the third planet from the Sun in the Solar System and is the only one to support life. The Earth rotates on an axis at a tilt of 23.5° . One rotation takes 24 hours, which is one day. The Earth orbits the Sun once every 365.25 days, which is a year.



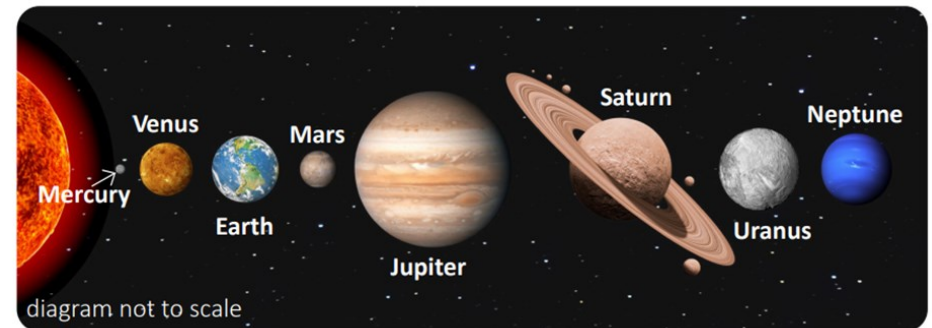
The Moon

The Moon is 385,000km away from Earth and has a diameter of 3500km. It orbits the Earth once every 27.3 days, which is around one month. It also rotates on its axis once every 27.3 days, so we only see one side of the Moon from Earth. The Moon is not a natural light source; it reflects the Sun's light.



The Planets

There are eight planets in the Solar System. The planets closer to the Sun (Mercury, Venus, Earth and Mars) are terrestrial planets because they are made of rock. They are hotter and have a shorter orbit and a shorter year than the planets farther away. Planets that are farther from the Sun (Jupiter, Saturn, Uranus and Neptune) are made of gas and are called gas giants. They are cold-



er and have a larger orbit and a longer year than the closer planets.

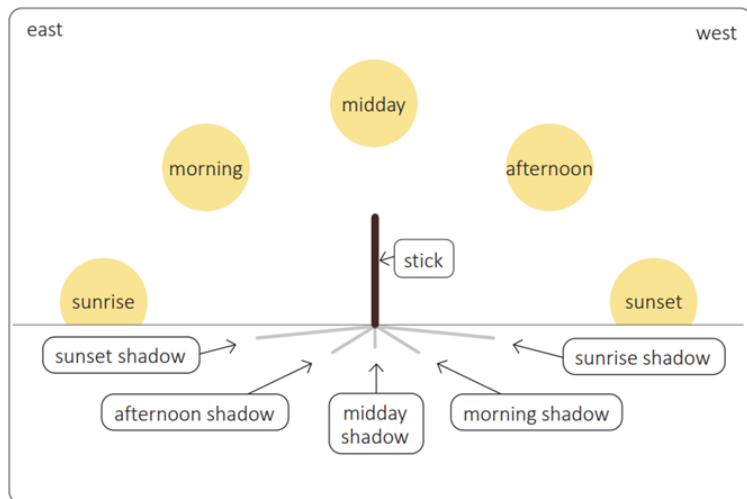
The planets and stars are spheres

Each planet and star is spherical because gravity, created by their large mass, pulls all material towards their centre and compresses it into the most compact shape, a sphere.



Daytime and night time

As the Earth rotates, it is daytime in the places that face towards the Sun, and night time in the places that face away from the Sun. During the day, the Sun appears to rise in the east, move across the sky in an arc and set in the west. However, this is due to the Earth rotating and not the Sun moving. The changing angle of the sunlight during the day changes the direction and length of shadows cast by objects on Earth.



Phases of the Moon

As the Moon orbits, we see differing amounts of the Moon's lit side from Earth. These are known as the phases of the Moon.



Solar and lunar eclipse

A solar eclipse is when the Moon passes directly between the Earth and the Sun, blocking our view of the Sun and casting a shadow on part of the Earth. A lunar eclipse is when the Earth is in line between the Moon and the Sun and casts a shadow on the Moon.

Glossary

Axis - An imaginary line that runs through the centre of an object, such as a planet, about which it rotates.

Orbit - The stable, circular path of an object revolving around a central mass with gravitational force, such as the planets revolving around the Sun, or the Moon revolving around the Earth.

Earth - The planet in our Solar System upon which we live that has the optimum conditions to support life, such as the right amount of water, oxygen and warmth.

Galaxy - A huge collection of dust, gas, stars and their solar systems.

Horizon - A visual boundary where the sky appears to meet the ground or sea.

Lunar - Relating to the Moon.

Lunar eclipse - When the Moon passes into the Earth's shadow and appears darker.

Mass - The amount of matter that an object contains.

Northern Hemisphere - The half of the planet Earth that is north of the equator.

Phases of the Moon - The descriptions of the appearance of the Moon at specific times during its monthly orbit, where different proportions of the lit and the unlit sides of the Moon can be seen from Earth.

Satellite - A natural or artificial object orbiting a larger natural object in space, such as the Moon or a spacecraft orbiting the Earth.

Rotate - To turn around an axis.