

Knowledge Organiser - Science - Earth and Space - Upper Key Stage 2 (Year 5 and 6) - Spring 1 2025

Careers connected to Earth and Space:
Astronomer, Astronaut, Astrophysicist, Astro
engineering



What I already know

- I have learned about forces and so have knowledge and understanding of gravity.



Sticky Learning

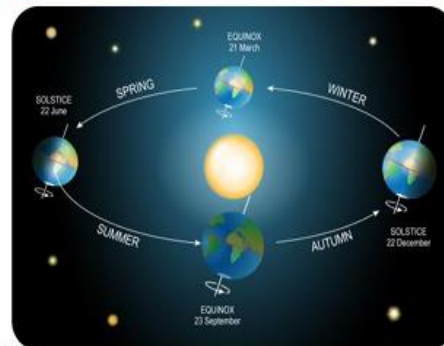
The Solar System



Mercury
Venus
Earth
Mars
Jupiter
Saturn
Uranus
Neptune

Copernicus developed the heliocentric theory that the sun was at the centre of the solar system. The planets orbit the sun in a circular pattern. Each planet has its own characteristics and features. The four inner planets are the rocky terrestrial planets. The four outer planets are the gas giants.

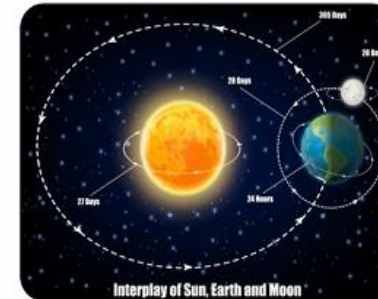
Moon Phases



The moon orbits Earth in an oval pattern whilst spinning on its axis. The sun illuminates the Moon. The shadow of the Earth creates the moon's phases.

Earth's movement

The Earth spins on its axis and completes a full rotation every 24 hours. The Earth is constantly rotating and orbiting the Sun - which takes 365 days. As the Earth rotates, it faces towards and away from the Sun. This creates the day and night cycle.



The Sun

The Sun is a burning ball of gas which appears to move across the sky during the day. However, this movement is actually due to the Earth's orbit around the sun.

Core Learning



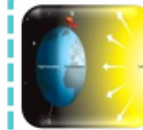
1. Explore the solar system and its planets.



2. Understand the heliocentric model of the solar system.



3. Explain Earth's movement in space.



4. Explain the Earth's rotation and night and day.



5. Explain the movement of the Moon.



6. Design a planet using knowledge gained.



Knowledge Organiser: Earth and Space

Before & After Test



Name the 8 planets in order from the Sun:

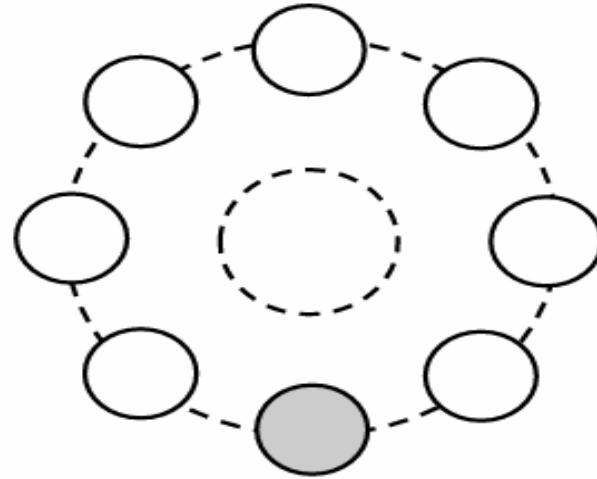
- | | |
|----------|----------|
| 1. _____ | 5. _____ |
| 2. _____ | 6. _____ |
| 3. _____ | 7. _____ |
| 4. _____ | 8. _____ |

What is the heliocentric model of the Solar System?

Kayleigh says, "The Sun is moving across the sky because it is travelling away from us."

Is Kayleigh correct? Explain your thoughts.

Shade the different phases of the Moon.



New Moon

Full Moon

Waxing Gibbous

Waxing Crescent

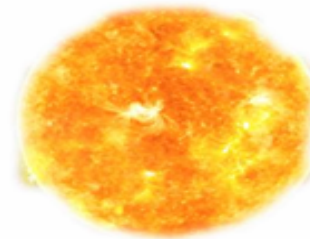
Waning Gibbous

Waning Crescent

First Quarter

Third Quarter

Demonstrate the Earth orbiting the sun below. Trace the path it will take.



Science (Rocket) Words

Word	Meaning
orbit	The path of a celestial object around another, such as Moon around the Earth
solar system	The name for the Sun and all planets and objects that orbit it
terrestrial planet	The name given to the four inner rocket planets - Mercury, Venus, Earth and Mars
gas giants	The name given to the four outer planets - Jupiter, Saturn, Uranus and Neptune
heliocentric	The modern model of the solar system, which places the Sun at the centre
geocentric	The old solar system model, which thought the Earth was at the centre
astronomy	The study of space, planets and the universe as a whole
axis	The (imaginary) line which a planet rotates around and tilts on
gnomon	The raised part of the sundial that causes a shadow
sundial	A device that uses the light of the Sun to show the time of day
time zone	One of 24 parts that the world is divided into so that different places can set their clocks correctly
Moon	Body which orbits a planet; also called a natural satellite
phase	The appearance of a Moon or planet, according to the amount of illumination seen
waxing	The name given to Moon phases when the Moon is becoming brighter
waning	The name given to Moon phases when the Moon is becoming darker