

Phase: 5/6	Subject: Science	Focus: Earth and Space	Term: Autumn
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What I should already know?

We have four seasons (autumn, winter, spring and summer).
 The Sun is a source of light but the Moon is not.
 I know that a shadow is caused when an object blocks light from passing through it.
 About the history of space travel.
 The properties of a sphere.

Vocabulary

Sun	A huge star that Earth and the other planets in our solar system orbit around.
Star	A giant ball of gas held together by its own gravity.
Moon	A natural satellite which orbits Earth or other planets.
Planet	A Large object, round or nearly round, that orbits a star.
Sphere	A round 3D shape in the shape of a ball.
Spherical bodies	Astronomical objects shaped like spheres.
Satellite	Any object or body in space that orbits something else, for example: the Moon is a satellite of Earth.
Orbit	To move in a regular, repeating curved path around another object.
Rotate	To spin. E.g. Earth rotates on its own axis.
Axis	An imaginary line that a body rotates around. E.g. Earth's axis (imaginary line) runs from the North Pole to the South Pole.
Geocentric model	A belief people used to have that other planets and the sun orbited around Earth.
Heliocentric model	The structure of the Solar System where the planets orbit around the sun.
Astronomer	Someone who studies or is an expert in astronomy (space science).

Knowledge

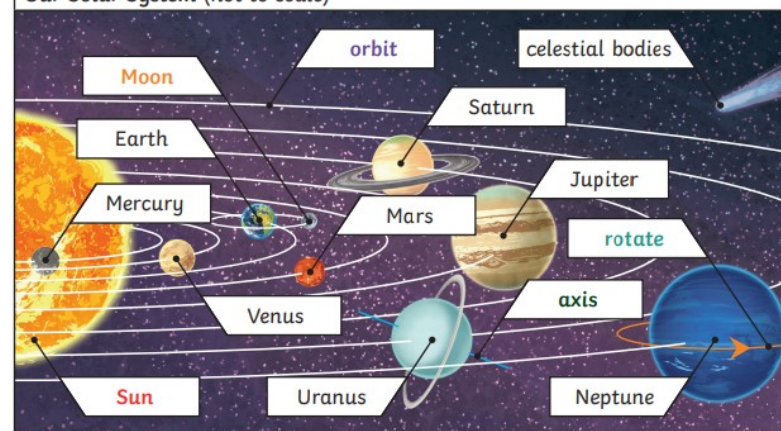
Mercury, Venus, Earth and Mars are rocky **planets**. They are mostly made up of metal and rock. Jupiter, Saturn, Uranus and Neptune are mostly made up of gases (helium and hydrogen) although they do have cores made up of rock and metal.

Earth **rotates** (spins) on its **axis**. It does a full rotation once in every 24 hours. At the same time that Earth is **rotating**, it is also orbiting (revolving) around the **sun**. It takes a little more than 365 days to orbit the **sun**. Daytime occurs when the side of Earth is facing towards the sun, Night occurs when the side of Earth is facing away from the **sun**.

It appears to us that the **sun** moves across the sky during the day but the sun does not move at all. It seems to us that the **sun** moves because of the movements of Earth.

Pluto used to be considered a **planet** but was reclassified as a dwarf planet in 2006.

Our Solar System (not to scale)



The Phases of the Moon

Time

The Earth to spin once on its axis.
 (When the Earth faces the sun it is daylight and when it faces away from the sun it is night. It makes the sun appear to travel across the sky)

24 hours

The moon to orbit the Earth
 (A lunar month - see Phases of the Moon)

28 days

The Earth to orbit the sun
 (Every 4 years there is a leap year due to the extra quarter - an extra day in February)

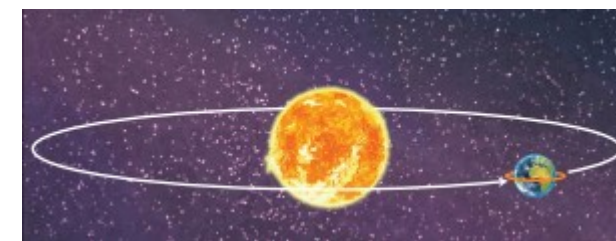
365 days $\frac{1}{4}$ days

The Earth's tilt on its axis is what causes the 4 seasons. Sometimes it points towards the sun and other times it points away from the sun.



By the end of the unit I should know...

The movement of the Earth and other planets relative to the sun in the solar system.
 The movement of the moon relative to the Earth.
 That I can describe the sun, Earth and moon as approximately spherical bodies
 Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky



<u>Question 1:</u> How do know that the Sun, Earth and Moon are spherical?
<u>Start of unit</u>
<u>End of Unit</u>
<u>Don't know</u>



<u>Question 5</u> What does the moon orbit?	<u>Start of Unit</u>	<u>End of Unit</u>
Earth		
The Sun		
Venus		
Don't know		

<u>Question 2:</u> Can you describe a feature of the planet, Saturn?
<u>Start of unit</u>
<u>End of Unit</u>
<u>Don't know</u>

<u>Question 6:</u> Can you explain why night and day occur at different times in different places on Earth.?
<u>Start of unit</u>
<u>End of Unit</u>
<u>Don't know</u>

<u>Question 3</u> Why is it not safe to look directly at the sun?
<u>Start of unit</u>
<u>End of Unit</u>
<u>Don't know</u>

What I would like to find out?

<u>Question 4:</u> Can you place the planets in the solar system in the correct order?	<u>Start of Unit</u>	<u>End of Unit</u>
Mercury		
Neptune		
Uranus		
Saturn		
Jupiter		
Venus		
Mars		
Earth		
Don't know		

Answers to my questions...