

	Year	5	Topic	Earth and space
	<ul style="list-style-type: none"> Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth. 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. 			

Prior learning	Future learning
<ul style="list-style-type: none"> Observe changes across the four seasons. (Y1 - Seasonal changes) Observe and describe weather associated with the seasons and how day length varies. (Y1 - Seasonal changes) 	<ul style="list-style-type: none"> Gravity force, weight = mass x gravitational field strength (g), on Earth $g=10 \text{ N/kg}$, different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun (qualitative only). (KS3) Our Sun as a star, other stars in our galaxy, other galaxies. (KS3) The seasons and the Earth's tilt, day length at different times of year, in different hemispheres. (KS3) The light year as a unit of astronomical distance. (KS3)

WHAT PUPILS NEED TO KNOW OR DO TO BE SECURE	
Show understanding of a concept using scientific vocabulary correctly	
Key learning	Possible evidence
<p>The Sun is a star. It is at the centre of our solar system. There are 8 planets (can choose to name them, but not essential). These travel around the Sun in fixed orbits. Earth takes $365\frac{1}{4}$ days to complete its orbit around the Sun. The Earth rotates (spins) on its axis every 24 hours. As Earth rotates half faces the Sun (day) and half is facing away from the Sun (night). As the Earth rotates, the Sun appears to move across the sky. The Moon orbits the Earth. It takes about 28 days to complete its orbit. The Sun, Earth and Moon are approximately spherical.</p>	<ul style="list-style-type: none"> Can create a voice over for a video clip or animation Can show, using diagrams, the movement of the Earth and Moon Can explain the movement of the Earth and Moon Can show using diagrams the rotation of the Earth and how this causes day and night Can explain what causes day and night
<p>Key vocabulary</p>	
<p>Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets</p>	

Common misconceptions

Some children may think:

- the Earth is flat
- the Sun is a planet
- the Sun rotates around the Earth
- the Sun moves across the sky during the day
- the Sun rises in the morning and sets in the evening
- the Moon appears only at night
- night is caused by the Moon getting in the way of the Sun or the Sun moving further away from the Earth.

Apply knowledge in familiar related contexts, including a range of enquiries

Activities

- Use secondary sources to help create a model e.g. role play or using balls to show the movement of the Earth around the Sun and the Moon around the Earth.
- Use secondary sources to help make a model to show why day and night occur.
- Make first-hand observations of how shadows caused by the Sun change through the day.
- Make a sundial.
- Research time zones.
- Consider the views of scientists in the past and evidence used to deduce shapes and movements of the Earth, Moon and planets before space travel.

Possible evidence

- Can use the model to explain how the Earth moves in relation to the Sun and the Moon moves in relation to the Earth
- Can demonstrate and explain verbally how day and night occur
- Can explain evidence gathered about the position of shadows in term of the movement of the Earth and show this using a model
- Can explain how a sundial works
- Can explain verbally, using a model, why we have time zones
- Can describe the arguments and evidence used by scientists in the past

Working scientifically

Year 5: Earth and Space

Classifying

- Not relevant

Observing over time

- Measure shadows throughout the day.

Pattern seeking

- Not relevant

Comparative/Fair testing

- Not relevant

Researching: Children independently ask scientific questions. This may be stimulated by a scientific experience or involve asking further questions based on their

developed understanding following an enquiry.

- Given a wide range of resources the children decide for themselves how to gather evidence to answer a scientific question. They choose a type of enquiry to carry out and justify their choice. They recognise how secondary sources can be used to answer questions that cannot be answered through practical work. The children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables. They decide what observations or measurements to make over time and for how long. They look for patterns and relationships using a suitable sample.

- Generate questions to research about the Earth and space. (Children present what they've learned in different ways: create a model, write a song, write a story, create a PPT, etc.

