

Science

Year 5 - Spring 2-Earth and Space

National Curriculum / End Point statement

Earth and Space

- Describe the Sun, Earth and Moon as approximately spherical bodies
- Describe the movement of the Moon relative to the Earth.
- Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.
- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Working Scientifically

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments.

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
Reactivate learning: Year 1 Earth and Space, Year 3 maths (leap year) WALT describe the shape of the Earth, Sun and Moon	WAL about the phases of the Moon	WAL about the planets in our Solar System	WALT compare the orbit of the planets in our Solar System	WALT use the rotation of the Earth to explain day and night	WALT compare the time of day in different places around the world
Success Criteria					
I can describe the shape of the Earth, Sun and Moon I know that the Earth is not flat I can talk about the shape of the Moon and how it appears	I can describe the phases of the Moon I know that the Moon orbits the Earth I can tell you about gravity I know that the Moon appears to change shape across a month	I can name the planets in our solar system I know that the Sun is a star I can explain what a leap year is I describe the movement of the Moon and planets in relation to the Sun	I can find out information about the planet's orbits I can present information I can answer a question	I know why there are 24 hours in one day I know why it gets dark at night I can tell you what geocentric means I can explain why the Sun looks like it is moving across the sky during the day	I can compare the time in different areas around the world I can explain why we have day and night I can use data to answer a question

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	I know that there are other Moons in the Solar system				
Suggested Outcome					
Children will know that the Earth, Moon and Sun are spherical and how we know.	Children will know the phases of the Moon and how it moves relative to the Earth.	Children will learn about the planets in our Solar System. They can name them and learn a mnemonic to help.	Use models to show the orbits and how they vary from planet to planet.	Children will know why day is light and night is dark.	Investigation into the time zones around the world and how e.g. 3am looks across Europe
Vocabulary			NC links		
Universe, Cosmos, Cosmic, Planets, Solar system, Star, Sun, Moon, Planet names, Heliocentric, Geocentric, Orbit, Rotate / rotation, Spherical, Astronomical bodies, Gravity, Gravitational pull, axis			Science: Forces – the force of gravity acting between the Earth and objects. Geography – time zones, lines of longitude History: Exploration of Space travel over time. Theories of the universe – heliocentric and geocentric – Copernicus. English text: Cosmic by Frank Cottrell Boyce (AR 4.5)		
Key Learning					
The Sun is a star. It is at the centre of our solar system. There are eight planets that travel around the Sun in fixed orbits. Earth takes 365 ¼ days to complete its orbit around the Sun. The Earth rotates on its axis every 24 hours. As it rotates, half of the Earth faces the Sun (day) and half faces away (night). The Sun appears to move across the sky as the Earth rotates but it is due to the rotation of the Earth and not the Sun moving. The Moon orbits the Earth, which takes about 28 days to complete. The Earth, Sun and Moon are approximately spherical.					
Possible Evidence			Common Misconceptions		
<ul style="list-style-type: none"> • Children can show, using diagrams, the movement of the Earth and Moon. • Children can explain the movement of the Earth and Moon. • Children can explain what causes day and night. • Children can show, using diagrams, the rotation of the Earth and how this causes day and night. • Children can create a voiceover for a video clip or animation. 			Some children may think: <ul style="list-style-type: none"> • 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 only appears at night • Night is caused by the Moon getting in the way of the Sun or the Sun moving further away from the Earth. 		

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Seasonal changes

Early learning goal	<ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes.
Year 1	<ul style="list-style-type: none"> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.
Year 2	
Year 3	<ul style="list-style-type: none"> Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3 - Light)
Year 4	
Year 5	<ul style="list-style-type: none"> Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. (Y5 - Earth and space)

Earth and space

Early learning goal	<ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes.
Year 1	<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)
Year 2	
Year 3	
Year 4	
Year 5	<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.