



EARTH AND SPACE

Year 5 (INTENT)

National Curriculum Aims

Pupils should be taught to:

- 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 ideas of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky

Vocabulary

celestial body
day
dwarf planet
Earth
geocentric
gravity
heliocentric

Jupiter
Mars
Mercury
Moon
night
orbit
planet

Pluto
rotate
rotation
Saturn
solar system
sphere
Sun

revolution
revolve
Uranus
Venus

Significant Individuals










Aristotle • Claudius • Ptolemy • Alhazen • Nicolaus Copernicus • Galileo Galilei • Sir Isaac Newton

Properties and changes of materials












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		Learning Objective	Overview of Teaching
PROGRESSION OF LEARNING (IMPLEMENTATION)		WALT: activate knowledge	The children will be introduced to the planets in our solar system and the order they come in. They will research information on the planets (what is it made of, number of moons, average temperature, year lengths).
		WS: I can raise questions, ask questions and suggest reasons for similarities and differences. 	
		SE: I can identify and classify planets with the support of research.  	
		WALT: identify the shape and relative size of Earth, the moon and the Sun.	Enquiry question – What shape might people once believed the Earth was? A pencil and water will be used as an example of illusions and it will demonstrate that everything might not be as it seems. The children will be provided with evidence/sources of significant individual's research on the shape of the Earth. This will then lead to the children having an understanding that all planets are spherical and why they are. The children will then be given day-to-day objects to decide which object best represents different celestial bodies in our solar system. They will then model the distance in the playground.
		WS: I can use measurement to represent planets in a model. 	
		SE: I can identify and classify planets with the support of research.  	
		WALT: explain day and night using a scientific model.	The children will be given statements to discuss (about the Earth) and decide who is right and wrong and why. They will then model the process of day and night with a tennis ball and torch. After, they will then apply their knowledge to understand why different countries have day and night at different times.
		WS: I can communicate my findings through a video. 	
	SE: I can use research to apply a concept to my own model.  		



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	Learning Objective	Overview of Teaching
PROGRESSION OF LEARNING (IMPLEMENTATION)	WALT: describe the movements of the Earth relative to the Sun	The children will be given statements to discuss (about the Earth and the Sun) and decide who is right and wrong and why. They will gain knowledge of: the geocentric model and significant individuals who supported this theory, and the heliocentric model and significant individuals who supported this theory. The children will model the process with a tennis ball and torch.
	WS: I can communicate my findings through a video 	
	SE: I can use research to apply a concept to my own model  	
	WALT: describe the movement of the Moon.	The children will be taught about the lunar cycle. They will then label each phase of the cycle and explain their understanding. Over the next month (at home) the children should record their observations of the Moon.
	WS: I can record my work using scientific diagrams and labels when representing the Moon phases. 	
	SE: I can observe changes over time. 	
	WALT: compare the time of day and day length at different places on Earth.	The children will discover the time zone of their allocated country using time zone maps and will develop an understanding of GMT. They will then research their daylight hours using different sources. Their results will be collated in a table and then transferred onto a line graph.
	WS: I can present my results in a table and as a line graph. 	
	SE: I can look for patterns in how much day light a country gets in relation to its location. 	



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CORE KNOWLEDGE AND SKILLS (IMPACT)

Pupils will know:

- Name and order the planets in our solar system (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune) (Know Pluto is a dwarf planet).
- Planets are spherical. Historically people believed the world to be flat.
- The moon is a celestial body that orbits a planet.
- Ideas about the solar system have changed over time from the geocentric model to the heliocentric model.
- Day and night is caused by the rotation of the Earth. It takes 24 hours for one whole anticlockwise rotation.
- The Earth orbits around the sun. One year is the same as one revolution, one revolution is 365 days $\frac{1}{4}$. The extra $\frac{1}{4}$ s create a leap year every 4 years.
- The Earth rotates on an axis causing the different seasons.
- Phases of the moon, including eclipses.

Pupils will be able to:

- Pose scientific questions to develop their understanding.
- Measure the relative distances between the Sun, Earth and Moon using a trundle wheel.
- Create models demonstrating day and night and the movement of the Earth.
- Label scientific diagrams of the phases of the Moon and observe the changes over a period of time.
- Record and present their findings of day light hours in a table and line graph.