



Year Group: Year Five

Question: Is there life on Mars?

<p>Learning objectives:</p> <ul style="list-style-type: none"> ~ to describe the movement of the Earth, and other planets, relative to the Sun in the solar system. ~ to describe the movement of the Moon relative to the Earth ~ to describe the Sun, Earth and Moon as approximately spherical bodies ~ to use the ideas of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky ~ to learn that the Sun is a star at the centre of the solar system and has eight planets ~ to understand that the Moon is a celestial body that orbits a planet 	<p>Key resources/stimuli</p> <ul style="list-style-type: none"> Video clips Solar system display Torch and spherical objects Cosmic (class read) Time zone maps Reference books 																						
<p>Key vocabulary</p> <table border="0"> <tr><td>Earth</td><td>Mercury</td></tr> <tr><td>Sun</td><td>Venus</td></tr> <tr><td>Moon</td><td>Earth</td></tr> <tr><td>rotation</td><td>Mars</td></tr> <tr><td>orbit</td><td>Jupiter</td></tr> <tr><td>axis</td><td>Saturn</td></tr> <tr><td>space</td><td>Uranus</td></tr> <tr><td>reflection</td><td>Neptune</td></tr> <tr><td>light source</td><td>seasons</td></tr> <tr><td>spherical</td><td></td></tr> <tr><td>phases of the Moon</td><td></td></tr> </table>	Earth	Mercury	Sun	Venus	Moon	Earth	rotation	Mars	orbit	Jupiter	axis	Saturn	space	Uranus	reflection	Neptune	light source	seasons	spherical		phases of the Moon		<p>Key knowledge</p> <ul style="list-style-type: none"> Day and night Earth split into time zones Length of a day/year Phases of the Moon Order of the planets Sun is centre of the solar system Orbit vs. rotation of planets Flat Earth vs spherical Earth theories Planets are spherical in shape
Earth	Mercury																						
Sun	Venus																						
Moon	Earth																						
rotation	Mars																						
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phases of the Moon																							



7. The Seasons

Children learn that the seasons are caused by the tilting of the Earth's axis towards the Sun, with the northern and southern hemispheres experiencing opposite seasons. They draw a labelled diagram to explain this.



1. Spherical Bodies

Children learn that the Sun, Earth and Moon are spherical. They consider some of the evidence throughout history for a flat Earth theory vs a spherical Earth theory before writing an explanation text with examples of this evidence.



6. The Moon

Children explore the movement of the moon relative to Earth and that the movement of shadows on the Moon is due to the Earth's rotation. Children draw a labelled diagram to show the phases of the moon.

Is there life on Mars?



2. The Planets

Children learn the order of the planets in the solar system and research and complete a poster describing some of their features. They consider what happens to a planet's orbit time the further away it is from the Sun.



5. Time Zones

Children learn why day and night happen at different times in different countries with regards to the rotation of the Earth on its axis. They use an atlas/time zone map to explore what time it is in different countries relative to GMT.



3. Geocentric vs Heliocentric

Children learn about the position of the planets in the solar system and how they all orbit the sun. They distinguish between the heliocentric and geocentric planetary models by drawing and annotating diagrams, and identifying key historical figures associated with these theories.



4. Night and Day

Children learn that night and day are caused by the rotation of the Earth on its own axis. They carry out a practical investigation to explore this phenomenon before writing an explanation text and drawing a labelled diagram to explain this.

Knowledge, Skills and Understanding breakdown for Science

Year Five

	Planning	Obtaining and presenting evidence	Considering evidence and evaluating
Expected	<ul style="list-style-type: none"> •Can they plan and carry out a scientific enquiry to answer questions, including recognising and controlling variables where necessary? •Can they make a prediction with reasons? •Can they use test results to make predictions to set up comparative and fair tests? •Can they present a report of their findings through writing, display and presentation? 	<ul style="list-style-type: none"> •Can they take measurements using a range of scientific equipment with increasing accuracy and precision? •Can they take repeat readings when appropriate? •Can they record more complex data and results using scientific diagrams, labels, classification keys, tables, scatter graphs, bar and line graphs? 	<ul style="list-style-type: none"> •Can they report and present findings from enquiries through written explanations and conclusions? •Can they use a graph to answer scientific questions?
Year Five (Challenging)			
Exceeding	<ul style="list-style-type: none"> •Can they explore different ways to test an idea, choose the best way and give reasons? •Can they vary one factor whilst keeping the others the same in an experiment? •Can they use information to help make a prediction? •Can they explain, in simple terms, a scientific idea and what evidence supports it? 	<ul style="list-style-type: none"> •Can they decide which units of measurement they need to use? •Can they explain why a measurement needs to be repeated? 	<ul style="list-style-type: none"> •Can they find a pattern from their data and explain what it shows? •Can they link what they have found out to other science? •Can they suggest how to improve their work and say why they think this?