


Lent 2
Science Year 5: Earth and Space (Physics)

Scripture Link: 1 Corinthians 13:11

National Curriculum Objective

Enquiry Question: What is the Solar System and how does it affect us?

	Lesson 1	Lesson 2	Lesson 3
Learning intention for each lesson	To know what we mean by the Solar System and the names of the 8 planets.	To know the relative size of each of the planets in relation to the sun.  KS1 & KS2 Fruit Solar System.pdf	To know how the moon moves in relation to the earth.
Recall and Retrieval	know that the 4 main stages of human life are baby(4 weeks – 1yr), child (1yr – 18yrs), adult (18yrs – 65yrs), old age (65yrs +). can describe some of the features of each stage.	know that the sun is the primary source of light know that the Solar System consists of the Sun and everything that orbits, or travels around, the Sun. know that this consists of: the eight planets and their moons, dwarf planets, and countless asteroids, comets, and other small, icy objects.	know the names of the main 8 planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Neptune, Uranus know which is the largest planet in our Solar system. know that there are 4 rocky, terrestrial planets and 4 gas giant planets
Sequence of substantive knowledge throughout the lesson	I know that the Solar System consists of the Sun and everything that orbits, or travels around, the Sun. I know that this consists of: the eight planets and their moons, dwarf planets, and countless asteroids, comets, and other small, icy objects. I know the names of the main 8 planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Neptune, Uranus.	I know which is the largest planet in our Solar system. I know that there are 4 rocky, terrestrial planets and 4 gas giant planets.	I know that the Moon <i>orbits</i> the Earth. This takes 28 days or one lunar month. I know that the Moon reflects light from the Sun and that is why we can see it. It is not a source of light but acts like a mirror. I know that as it orbits the Earth, we see the Moon from different angles each night. It appears to change shape as we see different parts of the surface lit up. These shapes are called the phases of the Moon. I know that there are 4 main phases of the moon: the new moon, first quarter, full moon, and last quarter.

Key Skills/disciplinary knowledge	<ul style="list-style-type: none"> reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a 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 	<ul style="list-style-type: none"> reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a 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 	<ul style="list-style-type: none"> planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary; reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations; identifying differences, similarities or changes related to simple scientific ideas and processes; identifying scientific evidence that has been used to support or refute ideas or arguments
Key Vocabulary	Earth, sun, moon, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune, spherical, solar system, rotates, star, orbit, planets, axis, night, day, season, galaxy. Meteorite, celestial	Earth, sun, moon, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune, Pluto (dwarf planet), spherical, solar system, rotates, star, orbit, planets, axis, night, day, season, galaxy. Meteorite, celestial	Earth, sun, moon, spherical, solar system, rotates, star, orbit, planets, axis, night, day, season, galaxy.
Main teaching activity <i>If the school has another short term planning format, this does not need to be included.</i>			
Scaffolding	Word banks Images.	https://www.youtube.com/watch?v=noiwY7kQ5NQ	Drama could be used to aid understanding Vocabulary cards could be provided to support scientific language.
Challenge	Mixed ability pairings	Vocabulary cards could be provided to support scientific language.	HA pupils could look at all 8 phases.
Diversity Links			
Catholic Social Teaching Principles			
British Values			

Wider links			
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Lent 2
Science Year 5: Earth and Space (Physics)

	Lesson 4	Lesson 5	Lesson 6
Learning intention for each lesson	(use lesson 6) To know how the surface of the moon is created and changes	To understand how we know that the earth, sun and moon are approximately spherical	(Use lesson 5) To explain day and night using Earth's rotation
Recall and Retrieval	<p>know that the Moon <i>orbits</i> the Earth and that this takes 28 days or one lunar month.</p> <p>Know what a reflection is</p> <p>know that the Moon reflects light from the Sun and that is why we can see it. It is not a source of light but acts like a mirror.</p> <p>know that as it orbits the Earth, we see the Moon from different angles each night.</p>	<p>know that smooth, shiny surfaces (such as mirrors and polished metals) reflect light well. Dull and dark surfaces (such as dark fabrics) do not reflect light well</p> <p>know that the moon is mostly made of rock</p> <p>know the three main rock types: igneous, metamorphic and sedimentary</p>	<p>understand that the earth is a giant magnet</p> <p>Know what dark is</p> <p>Know what a force is and can give examples.</p> <p>know that a planet is round because of gravity.</p> <p>know that a planet's gravity pulls equally from all sides.</p>
Sequence of substantive knowledge throughout the lesson	<p>I know that the moon is mostly made of rock.</p> <p>I know that the moon's surface is covered in 1,000s of tiny pits called craters</p> <p>I know that the craters form when chunks of rock and metal, called <u>meteorites</u> crash into the Moon.</p> <p>I know that these crashes have covered the Moon's surface with rocks and dust.</p> <p>I know that the Moon also has plains made of lava that erupted from volcanoes billions of years ago.</p>	<p>I know that a sphere is a 3D circle – like a ball.</p> <p>I know that a planet is round because of gravity.</p> <p>I know that a planet's gravity pulls equally from all sides.</p> <p>I know that gravity pulls from the centre to the edges (like the spokes of a bicycle wheel) and that makes the planets spherical.</p>	<p>I know that the Earth rotates on its axis and that this is happening all the time.</p> <p>I know that the axis is like an invisible line.</p> <p>I know that it takes 24 hours, or one day, to make a rotation.</p> <p>I know that when parts of the Earth face the Sun, it's daytime. When they are in the shade, it's nighttime.</p> <p>I know it takes about a month for the moon to go all the way around the Earth in a circle – we call this an orbit.</p> <p>I know that it takes a whole year for both of them to go all the way around the Sun. (So, this is how we measure days, and months and years).</p>
Key Skills/disciplinary knowledge	<ul style="list-style-type: none"> reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations; 	<ul style="list-style-type: none"> reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations; 	<ul style="list-style-type: none"> planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary; reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree

	<ul style="list-style-type: none"> identifying differences, similarities or changes related to simple scientific ideas and processes; identifying scientific evidence that has been used to support or refute ideas or arguments 	<ul style="list-style-type: none"> identifying differences, similarities or changes related to simple scientific ideas and processes; identifying scientific evidence that has been used to support or refute ideas or arguments 	<ul style="list-style-type: none"> of trust in results, in oral and written forms such as displays and other presentations; identifying differences, similarities or changes related to simple scientific ideas and processes; identifying scientific evidence that has been used to support or refute ideas or arguments
Key Vocabulary	spherical, solar system, rotates, star, orbit, planets, axis, night, day, season, galaxy. Meteorite, celestial, crater,	Earth, sun, moon, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune, Pluto (dwarf planet), spherical, solar system, rotates, star, orbit, planets, axis, night, day, season, galaxy. Meteorite, celestial	Earth, sun, moon, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune, Pluto (dwarf planet), spherical, solar system, rotates, star, orbit, planets, axis, night, day, season, galaxy. Meteorite, celestial
Main teaching activity <i>If the school has another short term planning format, this does not need to be included.</i>			
Scaffolding	Photographic images and YouTube footage from Lunar landings could be used to support.	https://www.bbc.co.uk/bitesize/clips/z9r634j	In resources section there is some example data and locations on a map. You could use this to challenge your more able thinking about the distance countries are from the equator.
Challenge			
Diversity Links			
Catholic Social Teaching Principles			
British Values			
Wider curriculum links			