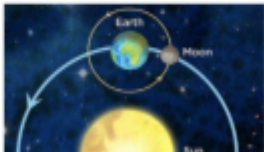
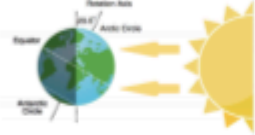
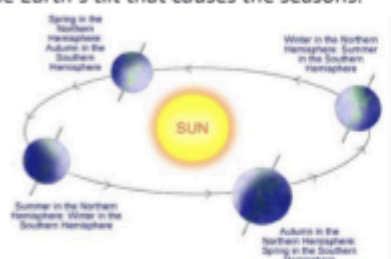


Caroline Haslett Primary School: Autumn 1 Earth and Space Year 5

What should I already know?
<ul style="list-style-type: none"> We have four seasons (autumn, winter, spring and summer). The Sun is a source of light but the Moon is not. Know that a shadow is caused when an object blocks light from passing through it. To know the history of space travel. The properties of a sphere.


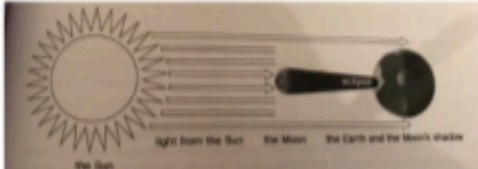
Other Diagrams
 <p>The Sun, Earth and Moon are approximately spherical.</p> <p>The Earth orbits the Sun.</p> <p>The Moon orbits Earth.</p>

What will I know by the end of the unit?
<p>What causes day and night?</p> <ul style="list-style-type: none"> The Earth rotates on its axis anti-clockwise and makes a complete rotation over 24 hours (a day). This makes it appear as the Sun moves through the sky but the Earth's rotation causes day and night. Different parts of the Earth experience daylight at different times - this means that it is morning, afternoon and night in different places. This is also the reason why we have time zones. Because of the Earth's tilt, the poles experience 24 hours of sunlight in the summer, and very few hours of sunlight in the winter. As the Earth rotates, shadows that are formed change in size and orientation. 

<p>Year length and the seasons</p> <ul style="list-style-type: none"> The Earth takes 365 and a quarter days to orbit the Sun. Because of the extra quarter day it takes to orbit the Sun, every four years on Earth is a leap year! It is the Earth's tilt that causes the seasons. 

<p>The Moon</p> <ul style="list-style-type: none"> The Moon orbits the Earth anticlockwise and takes approximately 28 days. The Moon spins once on its axis every time it orbits Earth. This means that we only see one side of the Moon. The Moon has different phases depending on where it is in its orbit. The Moon's gravity causes high and low tides.
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<p>What is the Solar System?</p> <ul style="list-style-type: none"> There are 8 planets in our Solar System (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune). Pluto is a dwarf planet. They all orbit the Sun, which is a star, and they all have moons. The first four planets are relatively small and rocky, while the four outer planets are gas giants (Jupiter and Saturn) or ice giants (Uranus and Neptune). There are also asteroids, meteoroids and comets in the Solar System. The Solar System is in a galaxy called the Milky Way. The galaxy is in the universe.

 <p>When the Moon passes between the Sun and Earth, the shadow cast by the Moon falls on the Earth's surface and we would no longer be able to see the Sun. This is called a solar eclipse.</p> 
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Vocabulary	
asteroid	a rock that orbits the Sun in a belt between Mars and Jupiter
axis	an imaginary line through the middle of something
comet	a bright object with a long tail that travels around the Sun
galaxy	an extremely large group of stars and planets. Our galaxy is called the Milky Way.
gravity	the force which causes things to drop to the ground
leap year	a year which has 366 days. The extra day is the 29th February. There is a leap year every four years
meteorite	a rock from outer space that has landed on Earth
orbit	the curved path in space that is followed by an object going round and round a planet, moon, or star
planet	a large, round object in space that moves around a star
shadow	a dark shape on a surface that is made when something stands between a light and the surface
Solar System	the Sun and all the planets that go round it
sphere	an object that is round in shape like a ball
spin	turns quickly around a central point
star	a large ball of burning gas in space
time zones	one of the areas into which the world is divided where the time is calculated as being a particular number of hours behind or ahead of GMT (Greenwich Mean Time)
universe	the whole of space and all the stars, planets, and other forms of matter and energy in it

Investigate!
<ul style="list-style-type: none"> Compare the time of day at different places on Earth. Construct shadow clocks and sundials. Keep a Moon diary over the course of a month - what do you notice?

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Working scientifically	<p>The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected. Use relevant scientific vocabulary to report on their findings. Answer questions and justify their conclusions based on evidence collected. Identify improvements, further questions and predictions.</p> <p>Questions can help us find out about the world and can be answered using a range of scientific enquiries. Ask a wide range of relevant scientific questions that broaden their understanding of the world around them and identify how they can answer them.</p> <p>An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time. Within a group, decide which observations to make, when and for how long, and make systematic and careful observations. Use them to make comparisons, identify changes, classify and make links between cause and effect. Data can be recorded and displayed in different ways, including tables, bar and line charts, classification keys and labelled diagrams. Gather and record data and results of increasing complexity, selecting from a range of methods (scientific diagrams, labels, classification keys, tables, graphs and models). The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected. Use relevant scientific vocabulary to report on their findings, answer questions and justify their conclusions based on evidence collected. Identify improvements, further questions and predictions.</p>
Earth and space	<p>The Solar System is made up of the Sun and everything that orbits around it. There are eight planets in our Solar System: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Describe or model the movement of the planets in our Solar System, including Earth, relative to the Sun.</p> <p>Earth orbits around the Sun and a year (365 days) is the length of time it takes for Earth to complete a full orbit. The Moon orbits Earth, completing a full orbit every month (28 days). Describe or model the movement of the Moon relative to Earth.</p> <p>The Sun, Earth, Moon and other planets and stars are roughly spherical. All planets are spherical because their mass is so large that they have their own force of gravity. This force of gravity pulls all of a planet's material towards its centre, compressing it into the most compact shape – a sphere. Describe the Sun, Earth and Moon as approximately spherical bodies and use this knowledge to understand the phases of the Moon and eclipses.</p> <p>As Earth orbits the Sun, it also spins on its axis. It takes Earth a day (24 hours) to complete a full spin. During the day, the Sun appears to move through the sky. However, this is due to the Earth rotating and not the Sun moving. Earth rotates to the east or, if viewed from above the North Pole, it rotates anticlockwise, which means the Sun rises in the east and sets in the west. As Earth rotates, different parts of it face the Sun, which brings what we call daytime. The part facing away is in shadow, which is night time. Use the idea of Earth's rotation to explain day and night, and the Sun's apparent movement across the sky.</p>