

## Gunthorpe Primary School – Science Knowledge Organiser

**Science Topic: Earth & Space**

**Year 5**

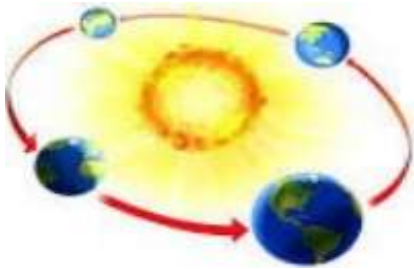

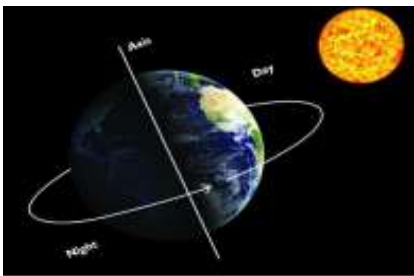

**Autumn Term 1**

Prior Learning:	What Next:
In Year 1, you observed the changes across the four seasons - observing and describing the weather associated with these seasons and how the length of days varied accordingly.	<p>During Key Stage 3, you will develop your knowledge of gravity as a force and how it is different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun.</p> <p>Learn about our Sun as a star, and other stars in our galaxy, other galaxies.</p> <p>Develop your understanding of the seasons and the Earth's tilt, day length at different times of year, in different hemispheres.</p> <p>The light year as a unit of astronomical distance.</p>

Key Vocabulary	
Planet	A roughly spherical object that orbits a star and does not emit its own light
Star	A burning mass of gas that makes heat and light energy
Solar system	A star with objects (such as planets) orbiting it
Universe	All of space and everything in it
Orbit	The curved path of a planet or satellite around an object
Axis	An imaginary line around which something rotates
Rotating	Moving in a circle around an axis
Gravity	The force that attracts an object towards a larger object
Gravitational pull	Moving towards a centre of gravity
Solar	Relating to the sun
Lunar	Relating to the moon
Terrestrial	Relating to the Earth
Satellite	An object either natural (moon) or man-made that orbits around a planet
Celestial	Positioned in the sky or in outer space (as observed in astronomy)
Astronomy	The branch of science that deals with space and the physical universe as a whole



Key Knowledge	
The Sun, Earth & Moon	
<b>WARNING</b>	<b>IT IS NOT SAFE TO EVER LOOK DIRECTLY AT THE SUN, EVEN WHEN WEARING SUNGLASSES</b>
What is the sun?	The sun is the star at the centre of our solar system.
What is a moon?	A moon is a celestial body that makes an orbit around a planet.
How does the Earth related to the sun?	<p>The Earth orbits (goes around) the Sun. The Earth takes one year (365 days) to orbit the Sun.</p> <p>The Earth is held in its orbit round the Sun by the Sun's gravitational pull.</p>
How does the moon related to the Earth?	<p>The moon orbits the Earth every 28 days. The moon is held in its orbit round the Earth by the Earth's gravitational pull.</p> <p>The moon's gravity pulls at the Earth, causing predictable rises and falls in sea levels known as tides.</p>
Why does the moon change shape?	<p>It does not change shape.</p> <p>It appears to change shape because we cannot always see the side of the moon that is in sunlight or we can only see part of the sunlit side of the moon as it orbits Earth.</p>
How else does the Earth move?	<p>The Earth spins on its own axis. The Earth takes 24 hours (1 day) to completely rotate on its axis.</p>
What causes day and night?	As the Earth spins on its axis, the side of the Earth facing the Sun is in daytime and the side of the Earth facing away from the Sun is in night time.
What causes Sunrise & sunset?	The Sun doesn't move – it is us that moves. Because the Earth is rotating, the Sun appears to move across the sky as the day goes on.
What is the solar system?	Our solar system has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus & Neptune – these all orbit the sun.

Diagrams & Symbols			
	The Earth orbiting the Sun, which takes one year.		The Moon orbiting the Earth, which takes about 28 days.
	The Earth spinning on its Axis, which takes 24 hours.		The phases of the moon.

Astronauts and Space Missions	Dr Helen Sharman	Major Tim Peake
<p>The first man-made satellite to orbit Earth was called Sputnik and was launched by the Soviet Union (Russia) in 1957.</p> <p>Yuri Gagarin, a Soviet cosmonaut, was the first man in space in 1961.</p> <p>Valentina Tereshkova, a Soviet cosmonaut, was the first woman in space in 1963.</p> <p>Neil Armstrong and Buzz Aldrin, American astronauts, were the first people to walk on the moon in 1969.</p> <p>The International Space Station(ISS) was launched in 1998 and is a joint project between 5 space agencies (USA, Russia, Japan, Europe and Canada). It is a research laboratory which is in Earth's orbit.</p>	 <p>A chemist and cosmonaut who became the first British person and first Western European woman to travel into space, as well as the first woman to visit the Mir space station, in May 1991.</p>	 <p>British astronaut and military officer who in 2016, while on a mission to the International Space Station (ISS), became the first British astronaut to walk in space.</p>
The only two British people, to date, to visit space.		

