



Year 5 – Earth and Space



Working Scientifically	Sticky Knowledge	Linked Texts	Key Scientists
- Recall and use specific scientific vocabulary accurately (year group key vocabulary) - Plan different types of scientific enquiries to answer questions, include recognise and control variables where necessary - Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why - Take measurements, use a range of scientific equipment, with increasing accuracy and precision, take repeat readings when appropriate - Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Report and present findings from enquiries, include conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms - Identify scientific evidence that has been used to support or refute ideas or arguments. - Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas	- Stars, planets and moons have so much mass they attract other things, including each other due to a force called gravity. Gravity works over distance. - Objects with larger masses exert bigger gravitational forces. - Objects like planets, moons and stars spin. - Smaller mass objects like planets orbit large mass objects like stars. - Stars produce vast amounts of heat and light. All other objects are lumps of rock, metal or ice and can be seen because they reflect the light of stars.	<i>The Skies Above My Eyes</i> (Charlotte Guillain & Yuval Zommer) <i>George's Secret Key to the Universe</i> (Lucy and Stephen Hawking with Christophe Galfard) <i>The Way Back Home</i> (Oliver Jeffers)	Claudius Ptolemy and Nicolaus Copernicus (Heliocentric vs Geocentric Universe) Neil Armstrong (First man on the Moon) Helen Sharman (First British astronaut) Tim Peake (First British ESA astronaut)
Key Question(s):	Key Question(s):	WS vocabulary	
Can you name the planets in our solar system in order from the sun? How does the earth and the other planets move around the sun? How are seasons created? How does the moon move in relation to the Earth? Why do day and night occur (in relation to the moon, sun and earth)? What does 'The sun, earth and moon are approximately spherical bodies' mean? What are the different phases of the moon? Why is the time of day different at different places on earth? Why does shadow size change over the course of a day?	How does temperature/size/day length/year length change as you get closer/further to the sun? How does distance from a light source affect how much light hits an object? Does having more moons result in more light hitting a planet? How could you test this? How does speed/size of a meteorite affect the size of the moon crater formed? If the moon became heavier as a result of meteorite collisions what would happen to its position relative to Earth? If the mass of the Earth is 80x that of the moon, why is the gravity at the Earth's surface only 6x greater than at the surface of the moon? Why do we have day/night/months/years/seasons? Why does day length change?	Investigation, enquiry, prediction, variable, dependent variable, independent variable, constant, patterns, equipment, apparatus, method, results, conclusion, graph, patterns, distance, data, theory, fair test, reasoning	

Teaching suggestions in Enquiry types

<u>Comparative tests</u>	<u>Identify & Classify</u>	<u>Observation over time</u>	<u>Pattern Seeking</u>	<u>Research</u>	<u>BIG Question – Problem solving</u>
How does the length of daylight hours change in each season? 	How could you organise all the objects in the solar system into groups? 	Can you observe and identify all the phases in the cycle of the Moon? 	Is there a pattern between the size of a planet and the time it takes to travel around the Sun? 	How do astronomers know what stars are made of? How have our ideas about the solar system changed over time? 	Sun, Earth & Moon: What is moving and how do we know? (Also use EXPLORIFY) <u>Assessment Opportunity</u> 