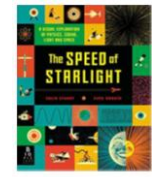
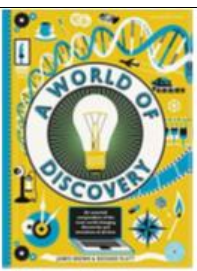
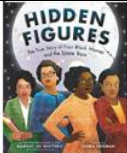




Class 4 Science Overview – Year A

Half-Term	Curriculum Links	Sticky Knowledge	Significant individual	Key text
Autumn 1	<u>Light (Year 6)</u> - Understand that light appears to travel in straight lines. - Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyes. - Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes. - Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.	- Know that light travels in straight lines. - A shadow will have the shape as the object that cast them. - Light enters our eyes through the pupil. - Predict the direction/change in a shadow depending on the position of the light source.	<i>Jules Carpentier</i> French Engineer famous for designing the periscope. He invented many items linked with light and sight.	 The speed of starlight  The Light Jar
Working Scientifically	Comparative tests: How does the length of daylight hours change in each season?			
Autumn 2	<u>Electricity (Year 6)</u> - Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. - Suggest why a bulb or buzzer may stop working when the voltage is increased. - Use recognised symbols when representing a simple circuit in a diagram.	- Know that the higher the voltage the brighter will be. - If the voltage is too high the component may stop working. - Know the symbols for different components (motor, bulb, buzzer and switch).	<i>James Watt</i> James Watt was a Scottish inventor and chemist who improved on the Newcomen steam engine which brought on the industrial revolution.	 A world of discovery

Working Scientific ally	Research: How has our understanding of electricity changes over time?			
Spring 1	<u>Properties and changes of materials</u> - Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal), and response to magnets. - Understand how some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. - Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. - Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. - Demonstrate that dissolving, mixing and changes of state are reversible changes. - Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning, oxidation and the action of acid on bicarbonate of soda.	- Know that soluble means it dissolves and give an example of a substance (coffee, sugar, salt) - Choose the best way to separate mixtures (sieving for solid/solid or liquid/solid; filtering for liquid/smaller solid; evaporating for liquid/dissolved solid) - Name a reversible change (mixing salt + water, freezing water, melting chocolate) - Name an irreversible change (rusting iron, burning wood, cooking egg)	<i>Stephanie Kwolek</i> A Polish-American chemist known for inventing Kevlar.	 The Rhythm of the Rain  Properties and changes of materials

Working Scientific ally	Observing over time: How does a nail in salt water change over time?			
Spring 2				
Summer 1	<u>Earth and Space</u> - Describe the movement of the Earth relative to the Sun in the solar system. - Describe the movement of the Moon relative to the Earth. - Describe the Sun, Earth and Moon as approximately spherical bodies. - Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the Sun across the sky.	- Know the 8 planets in the solar system. (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune). - Know how long it takes the Earth to rotate on its axis and to orbit the Sun. - Know that the moon orbits around the Earth and how long it takes. - Know that the Sun, Earth and Moon are approximately spherical bodies.	Year B <i>Nicolaus Copernicus</i> Copernicus was the first person to state that Earth and the other planets travel around the sun.	 Hidden Figures  Planetarium
Working Scientific ally	Pattern seeking: Is there a pattern between the size of a planet and the time it takes to travel around the sun?			

Summer 2	<u>Evolution & Inheritance</u> • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • Identify how animals and plants are adapted to suit their environment in different ways and how that adaptation may lead to evolution.	• Categorise fossils into body fossils (mould) and trace fossils (footprint). • Know that genes effect different traits so offspring are not identical • Explain how a bird/moth has adapted to survive.	<i>Charles Darwin</i> <i>Linda Brown Buck</i> Linda Brown Buck is an American biologist. She discovered that mammals have odorant receptors in their noses. This means they can smell over 10,000 different smells.	 Charles Darwin - Little People Big Dreams  On the origin of species
Working Scientific ally	Identifying and classifying: can you classify these observations into evidence for the idea of evolution and evidence against?			