



Year 5: Science Overview 2021- 2022/2022 -2023

Topic	<u>Autumn</u> Who Was Here Before Us? <i>Romans & WW2</i>	<u>Spring</u> The Variety of Life/earth matters <i>Life cycles</i>	<u>Summer</u> Exploration and Endeavour <i>Space</i>	
Main focus	History focus	Science/Geography focus	Science/geography focus	
Knowledge	<p>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>Explain that some changes result in the formation of new materials and that this kind of change is not usually reversible, including</p>	<p>Describe the differences in the lifecycle of a mammal, an amphibian, an insect and a bird</p> <p>Describe the life process of reproduction in some plants and animals including humans</p> <p>Describe the changes as humans develop to old age including puberty</p>	<p>Forces: Explain that objects fall to earth because of the force of gravity</p> <p>Identify the effects of air resistance, water resistance and friction</p> <p>Recognise the use of smaller forces in levers, pulleys and gears</p>	<p>Earth and Space: Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>Describe the movement of the moon relative to the earth</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>Explain day and night and the apparent movement of the sun across the sky using the idea of the earth's rotation</p>

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CREATIVITY

RESPONSIVE



	<p>changes associated with burning and the action of acid on bicarbonate of soda.</p>			
<p>Enquiries</p>	<p>Classifying Based on the children’s own criteria: classify the materials themselves e.g. samples of wood, metal, plastic, etc.</p> <p>Classifying After observing what happens when solids are added to liquids, classify materials based on the outcomes.</p> <p>Observing Over Time Observe rusting with uncoated nails in different liquids. (This can be achieved by removing coating with sandpaper.)</p> <p>Comparitive/Fair testing Which material would be good to make a tea bag from?</p> <p>Comparitive/Fair testing Which materials keep things warm/cold?</p>	<p>Researching Develop questions to ask an expert e.g. a health visitor, doctor or nurse. (Questions will need to be filtered by the teacher.)</p> <p>Classifying Classify animals according to their life cycle</p> <p>Pattern Seeking Children generate questions such as: Do larger mammals have longer gestation periods? Do larger animals live longer? Do smaller animals lay more eggs?</p> <p>Researching Research the life cycle of a chosen animal: mammal, amphibian, insect, bird e.g. dragon fly, cuckoo, salmon, worm, owl. (Children present what they’ve learned in different ways: create a model, write a song, write a story, create a PPT, etc.)</p>	<p>Comparative/ Fairtesting Compare friction eg trainers, or weighted match box pulled with force meter, balloon rockets,</p> <p>Comparative/ Fairtesting Compare water resistance eg Boats in a gutter of water, plasticine in a cylinder of liquid (easier with viscous liquid eg bubble bath)</p> <p>Comparative/ Fairtesting Compare air resistance Spinners, parachutes, sailing boats, straw rockets</p> <p>Comparative/ Fairtesting Compare levers, pulleys and gears</p>	<p>Observing Over Time Measure shadows throughout the day.</p> <p>Researching Generate questions to research about the Earth and space. (Children present what they’ve learned in different ways: create model write a song, write a story, create a PPT, etc.)</p>
<p>Knowledge Matrix</p>	<p>Knowledge Matrix - Prior Knowledge and Future Learning</p>			



Working Scientifically	Working Scientifically Skills Year 5 and 6				
Experiences			Hatching Eggs - Children to observe over time and present their observations in a variety of ways		
Vocabulary	Properties and changes of materials - Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material		Living Things and their Habitats - Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings Animals, including Humans - Puberty and vocabulary linked to puberty, gestation, development (See PSHE curriculum)	Forces - Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gear	Earth and Space - Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets
Assessment Tasks	TAPS Assessment - Comparative/Fair testing Insulation Layers		TAPS Assessment - Researching Life Cycle Research Adapting the Activity - Children create their own new species for a classification group and design its life cycle based on the life cycle of similar animals within that group.	TAPS Assessment Comparative/Fairtesting Craters	
Cross - curricular links	Romans Extracting salt from briny water –evaporation Using soot to make ink – irreversible change	World War 2 Gas masks – filtering to separate substances Materials used to make soldier’s kit Incendiary bombs – materials that burn and don’t burn in buildings	PSHE - Signs of Puberty 21st Century Learning - Making a difference in the local environment - creating and preserving habitats for local wildlife including birds and bees	The use of sails /an engine - How did Shackleton’s ship float and move? Research the limited diets followed by explorers in the Antarctic, the effects of cold on the circulatory system (frostbite, exposure	Navigation Investigate the use of stars in navigation linking to Shackleton’s exhibition 21st Century Learning: Should humans go to the moon? Who owns space?

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					etc) and training and equipment for modern expeditions. Link to pre-space manoeuvres and training in the Antarctic	
Events	Black History Month Anti- Bullying Week		Big Garden Birdwatch Book Week Year 5 Day at the Crick Science Week - Theme "Connections" Great Big School Clean		Camden Year 5 Science Challenge STEAM Exhibition Healthy Schools Week	
Core Texts	Leopard in the Golden Cage The Roman Record Julia Edwards	Letters From the Lighthouse Emma Carroll	Cicada Shaun Tan The Wind in the Willows Kenneth Graham	Non-Fiction focus: places (holiday brochure) (link to computing)	Shackleton's Journey <i>William Grill</i>	Cosmic Frank Cottrel-Boyce
Science is:	<p>RESPONSIVE Responds to what is happening right now</p> <p>CREATIVE Linked to science and the arts</p> <p>COMMUNITY Has a purpose</p> <p>EXPERIENTIAL Is enhanced by experiences</p>					