



Year 5: Science Overview 2023-2024

Topic	<u>Autumn</u> Migration and Settlement		<u>Spring</u>		<u>Summer</u>	
Main focus	The Windrush	Sayers Croft	North America	Vikings	Exploration and Endeavour	Early Islamic Civilisation Bagdad c. AD 900
Knowledge Life cycles and reproduction Human development and puberty Properties of materials Earth and Space Forces	Gravity and friction Explain that objects fall to earth because of the force of gravity Identify the effects of air resistance, water resistance and friction	Human Development and puberty Describe the changes as humans develop to old age including puberty	Life Cycles and reproduction Describe the differences in the lifecycle of a mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals including humans	Properties of Materials 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 Know that 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	Earth and Space: Describe the movement of the Earth, and other planets, 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 Explain day and night and the apparent movement of the sun across the sky using the idea of the earth's rotation	Pulleys and levers Recognise the use of smaller forces in levers, pulleys and gears

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				<p>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 changes associated with burning and the action of acid on bicarbonate of soda</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>Explain that objects fall to earth because of the force of gravity</p>	
Enquiries	<p>Comparative/ Fairtesting</p> <p>Compare friction eg trainers, or weighted</p>	Describe ways that you are different from a baby.	<p>Researching</p> <p>Develop questions to ask an expert e.g. a health visitor, doctor</p>	<p>Classifying</p> <p>Based on the children's own criteria:</p>	<p>Observing Over Time</p> <p>Measure shadows throughout the day.</p>	<p>Comparative/ Fairtesting</p> <p>Compare levers, pulleys and gears</p>

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	<p>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>What doesn't change as humans grow up?</p> <p>At which stage of life do you think humans are strongest and why?</p>	<p>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>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 the coating with sandpaper.)</p> <p>Comparative/Fair testing Which material would be good to make a tea bag from?</p> <p>Comparative/Fair testing Which materials keep things warm/cold?</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>	
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Knowledge Matrix	Knowledge Matrix - Prior Knowledge and Future Learning					
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	Forces - Force, gravity, Earth, air resistance, water resistance, friction,	Animals, including Humans - Puberty and vocabulary linked to puberty, adult adolescent, menstruation, scrotum, testes, pubic hair, uterus, development (See PSHE curriculum)	Living Things and their Habitats - Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings	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	Earth and Space - Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planet	Forces - Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gear
Assessment Tasks	TAPS Assessment - Parachute car investigation Working Scientifically Focus Plan: planning different types of scientific enquiries to answer questions, including recognising and controlling variables		TAPS Assessment - Egg Strength Working Scientifically Focus Review: Explain the degree of trust in the results		TAPS Assessment Craters Enquiry focus Do: Gather and record data of increasing complexity using tables	

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Cross - curricular links		PSHE - Puberty			21st Century Learning: Should humans go to the moon? Who owns space?	Early Islamic Civilisation Bagdad c. AD 900 Astronomy and astrolabe
Events	Black History Month Anti- Bullying Week		Big Garden Birdwatch Book Week Great Big School Clean		Camden Year 5 Science Challenge Science week - Y5 day at the Crick STEAM Exhibition Healthy Schools Week Sports Day	
Science is:	RESPONSIVE Responds to what is happening right now CREATIVE Linked to science and the arts COMMUNITY Has a purpose EXPERIENTIAL Is enhanced by experiences					