

Primary Science Curriculum Overview

'Described separately in the PoS, but must **always** be taught through and clearly related to the teaching of substantive science content' (i.e. dual objectives)

Key Stage	Year	Programme of Study
KS1	1-2	<ul style="list-style-type: none"> • Asking simple questions & recognise they can be answered in different ways (use science experience to explore; ask how things are similar, different or change; ask how they happen) • Identifying & classifying (compare simple features; decide, with help, how to sort & group) • Observing closely using simple equipment (observe changes over time; use simple measurement & equipment) • Performing simple tests (experience different types of enquiry (inc practical), begin to work with different tests; carry out simple tests) • Gathering & recording data to help in answering (record & communicate, findings in a range of ways; begin to use simple scientific language, use simple measurements & equipment)) • (Recording findings using standard units, drawings, diagrams, photographs, simple prepared formats such as tables and charts, tally charts, and displays) • Using observations & ideas to suggest answers to questions (choose ways they might answer; talk about what has happened; notice, with help, patterns & relationships; use simple secondary sources to find answers)
Lower KS2	3-4	<ul style="list-style-type: none"> • Asking relevant questions & using different types of scientific enquiry to answer them (use practical science to raise own questions; identify where patterns might be found) • Setting up simple practical, comparative and fair tests (given range of experience, decide on most appropriate type of enquiry; recognise when a fair test is necessary, design fair test) • Making systematic & careful observations &, where appropriate, taking accurate measurements using standard units, using a range of equipment including thermometers & data-loggers (decide what observations & data to collect; how long to make them for & what type of simple equipment might be used; collect data from own observations & measurements) • Gathering, recording, classifying & presenting data in a variety of ways to help in answering questions (talk about criteria for grouping, sorting & classifying, use simple keys) • Recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables (Use notes, simple tables & standard units) • Reporting on findings from enquiries, including oral & written explanations, displays or presentations of results and conclusions (decide how to record data) • Identifying differences, similarities or changes related to simple scientific ideas & processes (with help, look for naturally occurring patterns & relationships) • Using results to draw simple conclusions, make predictions for new values, suggest improvements & raise further questions (with help, predict new values within & beyond collected data) • Using straightforward scientific evidence to answer questions or support their findings (recognise when & how secondary sources might help answer, communicate for different audiences)
Upper KS2	5-6	<ul style="list-style-type: none"> • Identifying scientific evidence that has been used to support or refute ideas or arguments (separate opinion from fact, explore ideas & raise different kinds of questions; discuss, communicate & justify their scientific ideas; talk about how science ideas have developed over time) • Planning different types of enquiry to answer questions, including, recognising and controlling variables where necessary (select & plan most appropriate type of enquiry; recognise when & how to set up comparative & fair tests; explain which variables need to be controlled & why) • Taking measurements using a range of scientific equipment with increasing accuracy and precision, taking repeat readings when necessary (choose most appropriate equipment; explain how to use equipment accurately, decide what observations to make, what measurements to use & how long to make them for) • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (use & develop keys & other info records to identify, classify & describe) • Reporting & presenting findings from enquiries, including conclusions, causal relationships and explanations of & degree of trust in results, in oral & written forms such as displays & other presentations (identify patterns; decide how to record data; look for different causal relationships, use relevant scientific language) • Using test results to make predictions to set up further comparative and fair tests (identify when further test are needed, recognise which secondary sources would be most useful to research ideas)

Key Stage 1	1	Plants <ul style="list-style-type: none"> Identify (garden, wild, trees) Deciduous, evergreen Basic structure of a variety of common flowering plants, inc trees (roots, stem, leaves, flower) 	Animals Including Humans <ul style="list-style-type: none"> Identify (birds, fish, amphibians, reptiles, mammals), describe & compare structure Identify carnivores, herbivores, omnivores Label human body parts, link to senses 	Everyday Materials <ul style="list-style-type: none"> Distinguish between object & material it is made of Identify everyday materials (e.g.s) Describe simple physical properties of materials Compare / group materials by physical properties 	Seasonal Changes <ul style="list-style-type: none"> Observe changes across seasons Observe & describe weather / day length changes with seasons 	
	2	Living Things & Habitats <ul style="list-style-type: none"> Explain difference between living, dead & non living (7 processes of life) Live in habitats (suited) Habitats provide basic needs. Depend on each other. Study habitats/microhabitats Food chains (feeding only) 	Plants <ul style="list-style-type: none"> Growth from seed/bulb Requirements for growth (water, light & suitable temperature) 	Animals Including Humans <ul style="list-style-type: none"> Offspring into adults Explain basic needs for survival (water, food & air) Need for exercise / nutrition / hygiene <i>Life cycle of insect & amphibian</i> 	Uses of Everyday Materials <ul style="list-style-type: none"> Identify/compare uses of everyday materials Find out how shapes of solids can be changed by squashing, bending, twisting & stretching 	
Lower Key Stage 2	3	Plants <ul style="list-style-type: none"> Identify/describe functions of parts (root, stem, leaf, flower) Explore requirements for growth (air, light, nutrients, room) & how they vary Investigate transport of water Role of flowers in life cycle (pollination, seed formation / dispersal) 	Animals Including Humans <ul style="list-style-type: none"> Get nutrition from food Skeletal/muscular system (simple names) & functions <i>Life cycle of bird & mammal</i> 	Rocks <ul style="list-style-type: none"> Compare/group on physical properties Fossil formation (trapped in rock) Recognise soils are made from rocks & organic matter 	Light <ul style="list-style-type: none"> Recognise need light to see things; dark is absence of light Light can be reflected Light from sun can be dangerous to eyes Shadows (light blocked) Patterns in the size of shadow 	Forces and Magnets <ul style="list-style-type: none"> Compare how things move on different surfaces Explore push/pull Contact forces & 'distance' forces (gravity/magnetism) Magnets attract / repel; two poles Compare/group materials with magnets
	4	Living Things & Habitats <ul style="list-style-type: none"> Recognise living things can be grouped in different ways Explore & use keys. Identify / name variety of living things in environment Recognise environments change & pose dangers to living things 	Animals Including Humans <ul style="list-style-type: none"> Digestive system (simple) Teeth (inc structure/function) Construct food chains (producers, consumers, predators & prey) 	States of Matter <ul style="list-style-type: none"> Groups as solids, liquids, gases. Compare Explain change state with heating & cooling (°C) Role of evaporation & condensation in water cycle 	Electricity <ul style="list-style-type: none"> Identify common appliances Construct simple circuit Series circuit. Switches Common conductors (metals) & insulators 	Sound <ul style="list-style-type: none"> Identify how sounds are made How sounds travel through medium to ear (vibration) Explain sound travels away from source. Gets fainter. Patterns in pitch & object, Patterns in volume & vibration
Upper Key Stage 2	5	Animals Including Humans <ul style="list-style-type: none"> Changes as humans develop to old age (inc puberty) 	All Living Things <ul style="list-style-type: none"> Life cycles of mammal, amphibian, an insect & a bird Describe reproduction in some plants & animals (inc sexual /asexual) 	Properties & Changes of Materials <ul style="list-style-type: none"> Compare/group materials based upon properties Explain dissolving to form a solution. Recovery. Separating mixtures Reasons for material uses based upon testing evidence Dissolving, mixing, changes in state are reversible Irreversible changes 	Earth & Space <ul style="list-style-type: none"> Describe movement of earth relative to sun & planets (solar system) Describe movement of moon relative to earth Sun, earth, moon are spherical Explain day / night & movement of sun across sky 	Forces <ul style="list-style-type: none"> Explain objects fall towards earth due to force of gravity Effects of air / water resistance & friction Some mechanisms, inc levers, pulleys & gears, allow a smaller force to have greater effect
	6	Living Things & Habitats <ul style="list-style-type: none"> Describe classification into broad groups (animals, plants, microbes) based on observable features Reasons for classifying plants & animals based on specific characteristics 	Animals Including Humans <ul style="list-style-type: none"> Identify / name parts of human circulatory system. Functions of heart, vessels & blood Impact of diet, exercise, drugs & lifestyle on body function Transport of water / nutrients in animals 	Evolution and Inheritance <ul style="list-style-type: none"> Living things change over time (fossil evidence) Recognise offspring may vary / non-identical to parents Explain how adaptation leads to evolution 	Electricity <ul style="list-style-type: none"> Explain variation in brightness, loudness with number & voltage of cells used. Explain variations in component function (brightness, loudness, on/off) Recognise symbols in circuit diagram 	Light <ul style="list-style-type: none"> Light travels in straight lines from a light source or reflected into the eye Ray model to explain size of shadows (prediction)