



Progression in Science

The National Curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

Year 3 is learning about...

Autumn		Spring		Summer	
<u>The Human Body</u> • The digestive system, teeth and senses, • a healthy diet, nutrition, vitamins and minerals, • skeletons and muscles for support, protection and movement.	<u>Cycles in Nature</u> Seasonal cycles and plants, animal migration. Life cycles of a plant and a frog	<u>Light</u> How light travels, shadows, transparent and opaque objects, reflection, mirrors: plane, concave, convex, how shadows change throughout the day	<u>Plants</u> Functions of plants: roots, stem/trunk, leaves and flowers, Life and growth, variety of plants, water transportation, seed formation and dispersal	<u>Rocks</u> Sorting rocks, how rocks are formed, hardness and permeability, fossils, soil.	<u>Forces and Magnets</u> Forces, friction, magnets, magnetic poles, magnetic fields, law of magnetic attraction, compasses.

Year 3 are learning to work scientifically by: • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings. • recognise when a simple fair test is necessary and help to decide how to set it up • talk about criteria for grouping, sorting and classifying; and use simple keys • collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data • make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used • how to use new equipment, including thermometers and data loggers • look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions • making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done • use relevant scientific language to discuss their ideas and communicate their findings					
Year 4 is learning about ...					

Autumn		Spring		Summer	
<u>The Human Body</u> The muscular system, the skeletal system, the nervous system, the digestive system, teeth	<u>Classification of Plants and Animals</u> Cold-blooded or warm-blooded, vertebrates or invertebrates, characteristics of animal classes, classification of plants	<u>Ecology</u> Habitats, interdependence of organisms and their environment, producers, consumers and decomposers, food webs, producers, predators and prey, human threats to the environment.	<u>Sound</u> How sound is created, how sound travels, sound waves, speed of sound, pitch, intensity, the human voice, hearing, the human ear	<u>States of Matter and the Water Cycle</u> Change of state, evaporation, condensation, precipitation, humidity, groundwater.	<u>Electricity</u> Electric current, circuits, switches, conductors and insulator

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- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
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- recognise when a simple fair test is necessary and help to decide how to set it up
- talk about criteria for grouping, sorting and classifying; and use simple keys
- collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions

about how to record and analyse this data

- make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used
- how to use new equipment, including thermometers and data loggers
- look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions
- making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done
- use relevant scientific language to discuss their ideas and communicate their findings

Year 5 is learning about...

Autumn		Spring		Summer	
<u>Astronomy</u> The Big Bang theory, gravity, the Universe, our Solar System, the moon and our galactic neighbourhood.	<u>Meteorology</u> Weather and climate, the atmosphere, the Ozone layer, air movement and wind direction, cold and warm fronts, thunder and lightning.	<u>Materials</u> Properties- solubility, conductivity, flexibility, fair testing, solubility, separation of mixtures, reversible changes- dissolving, mixing, change of state	<u>Forces</u> Gravity, friction, air resistance, water resistance, pulleys, gears and levers	<u>Living Things</u> Life cycles of a mammal, an amphibian, an insect and a bird, life process of reproduction in some plants and animals, Photosynthesis, vascular and non-vascular plants.	<u>The Human Body:</u> Human growth stages, adolescence and puberty, The human reproductive system, The endocrine system

Year 5 are learning to work scientifically by:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments
- plan the most appropriate type of scientific enquiry to use to answer scientific questions
- recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why
- use and develop keys and other information records to identify, classify and describe living things and materials
- make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them
- choose the most appropriate equipment to make measurements and explain how to use it accurately
- decide how to record data from a choice of familiar approaches
- look for different causal relationships in their data and identify evidence that refutes or supports their ideas
- use their results to identify when further tests and observations might be needed
- talk about how scientific ideas have developed over time

Year 6 is learning about...

Autumn		Spring		Summer	
<u>The Human Body</u> The circulatory system, the heart, the blood vessels, the blood, blood pressure and	<u>Electricity</u> Brightness, buzzers, voltage, switches, simple circuits and symbols	<u>Classification of Living Things</u> Classifying organisms, plant and animal cells, fungi, protists,	<u>Light</u> How light travels, Our eyes, light sources, shadows, periscopes	<u>Evolution</u> Fossils, adaptation, characteristics passing through generations, Mary	<u>Reproduction</u> Asexual reproduction, sexual reproduction in non-flowering and

heart rate, changes to humans as we get older		monera, taxonomy, Latin names, vertebrate		Anning, Alfred Wallace, Charles Darwin, Darwin's sketches of finches.	flowering plants, pollination, fertilisation, reproduction in animals, growth stages
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