



Science Long Term Plan 2020-21 ongoing

Rationale:

Science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science aims to develop scientific knowledge and conceptual understanding; the nature, processes and methods of science through different types of scientific enquiries; equip pupils with the scientific knowledge required to understand the uses and implications of science, today and for the future.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	<p>Animals, including humans: Identify and name animal groups, basic classification</p> <p>Seasonal change and weather across all terms</p>	Space (not on the curriculum but links with topic)	Animals, Including humans: the human body and the five senses	Everyday materials: Physical properties and grouping	Plants: Identifying and describing the basic structure; name common plants	As Summer 1
Year 2	Uses of materials and changing materials	Plants: Growing plants and what plants need to grow	Living things and their habitats: Simple adaptation and interdependence	Animals, including humans: Food and exercise, keeping healthy, basic human needs	Habitats including micro-habitats. Suitability of habitats	Changes in nature (environmental impact)



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	Light: Sun and shadows	Rocks and fossils: Formation and grouping	Animals including humans: Skeletons, muscles and movement	Healthy eating: Nutrition and food groups	Plants: Functions of plant parts, water transport, seed dispersal and pollination	Forces and magnets: Attract and repel, explore magnetic and non- magnetic materials
Year 4	Animals including humans: Basic digestive system and teeth	Living things and their habitats: Environmental change and dangers to living things	Sound: Vibration, pitch, volume	Electricity: Construct simple series circuits, switches and common conductors and insulators	Living things and their habitats: Simple classification keys, food chains (producers, predators, prey)	States of Matter: Solids, liquids and gases
Year 5	Earth in Space: Movement of Earth and planets in the solar system. Earth's rotation, night and day	Properties and changes of materials: Comparing and grouping materials. Separation by filtering, sieving and evaporating, dissolving	Animals including humans Change over time including puberty	Living things in their habitats: Plant and animal reproduction, life cycles of mammals, amphibians, insects and birds	Forces: Gravity, air and water resistance, friction, levers, pulleys, gears	Properties and changes of materials: Reversible and irreversible changes



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 6	Electricity: Investigate brightness of bulbs and volume of buzzer. Use recognised symbols for a circuit diagram	Light: Light travels in straight lines, light and shadow investigations	Animals including humans: Circulatory system, impact of diet and exercise, lifestyle	Living things and their habitats: Classification of plants, animals and micro organisms	Living things and their habitats continued.	Evolution: Inheritance: fossils, adaptation, evolution and variation



Progression of enquiry skills	
KS1 (Y1/Y2)	<ol style="list-style-type: none"> 1. Questioning - Ask simple questions and recognise that these can be answered in different ways 2. Observation - Observe how something changes over time 3. Testing - Notice patterns and relationships with support and begin to record and share their findings 4. Identifying and classifying - Identify simple features and use this information to create groups 5. Hypothesising - Suggesting answers to questions using prompted scientific vocabulary as well as talk about what they have found out and how they found it 6. Gathering and recording information - Use simple measurements and equipment to gather data as well as gather information from simple secondary sources and by asking people questions
Lower KS2 (Y3/Y4) <i>Pupils will receive guidance on which investigation is the most appropriate to solve a scientific problem</i>	<ol style="list-style-type: none"> 1. Pattern seeking - Begin to look for patterns and relationships and decide what data to collect to identify them 2. Fair testing - Plan and set up fair tests with guidance (support with identifying variables) 3. Identifying and classifying - Talk about criteria for grouping, sorting and classifying; and use simple keys 4. Observation over time - Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used 5. Research - Recognise when and how secondary resources might help them to answer questions that cannot be answered through practical investigations
Upper KS2 (Y5/Y6) <i>Pupils are able to independently select which investigation is most appropriate to solve a scientific problem</i>	<ol style="list-style-type: none"> 1. Pattern seeking - 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 2. Fair testing - Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why 3. Identifying and classifying - Use and develop keys and other information records to identify, classify and describe living things and materials 4. Observation over time - Decide what observations to make, what measurements to use and how long to make them for, and whether to repeat them 5. Research - Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact