

Year 4 Science Curriculum

Year 4	<b>Knowledge</b>	<b>Scientific Skills</b>	<b>Vocabulary</b>
	<ul style="list-style-type: none"> <li>• During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</li> <li>• Asking relevant questions and using different types of scientific enquiries to answer them</li> <li>• Setting up simple practical enquiries, comparative and fair tests</li> <li>• Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>• Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>• Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>• Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>• Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> </ul>	<p><b>Classifying</b>  <b>Observing over time</b>  <b>Pattern seeking</b>  <b>Research</b>  <b>Comparative/fair testing</b></p>	

	<ul style="list-style-type: none"> <li>Identifying differences, similarities or changes related to simple scientific ideas and Processes using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>		
Living Things and their habitats	<ul style="list-style-type: none"> <li>Recognise that living things can be grouped in a variety of ways</li> <li>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>Recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul>	<p><b>Classifying</b> Make simple guides or keys to explore and identify local plants and animals.</p> <p><b>Observing over time</b> Observe living things in their own area at different times of the year.</p> <p><b>Pattern seeking</b> Raise and answer questions based on observations of animals and what they have found out about other animals. Through research.</p> <p><b>Research</b> Conduct research on animals not found locally. Make a guide to local living things based on their observations and research.</p>	<p><b>Previous vocabulary</b> decay, energy, habitat, freezing, plant, structure, herbivore, carnivore, omnivore, microhabitat, environment, reproduction, vertebrate</p> <p><b>New vocabulary</b> Classification key, species, fungi, bacteria, climate change, characteristics, offspring, extinction, pollution.</p>
Animals including humans	<ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans</li> <li>Identify the different types of teeth in humans and their simple functions</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>	<p><b>Comparative/fair testing</b> Compare the teeth of carnivores and herbivores, and suggest reasons for differences.</p> <p><b>Research</b> Find out what damages teeth and how to look after them.</p>	<p><b>Previous vocabulary</b> absorption, component, dissolving, energy, nutrients, consumption, hygiene, herbivore, carnivore, organ</p> <p><b>New vocabulary</b> digestion, excretion, peristalsis, anus, duodenum, small intestine,</p>

		Draw and discuss their ideas about the digestive system and compare them with models or images.	large intestine, stomach, rectum, oesophagus, tongue, saliva, acid, bile, enzymes, incisors, canines, molars, predator, prey, producer, consumer, primary, secondary, tertiary
Sound	<ul style="list-style-type: none"> <li>Identify how sounds are made, associating some of them with something vibrating</li> <li>Recognise that vibrations from sounds travel through a medium to the ear</li> <li>Find patterns between the pitch of a sound and features of the object that produced it</li> <li>Find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>Recognise that sounds get fainter as the distance from the sound source increases.</li> </ul>	<p><b>Pattern seeking</b> Find patterns in the sounds that are made by different objects.</p> <p><b>Research</b> Make and play their own instruments by using what they have found out about pitch and volume.</p> <p><b>Comparative/fair testing</b> Investigate which material provides the best insulation against sound.</p>	<p><b>Previous Vocabulary</b></p> <p>absorption, conductor, energy, insulator, wave</p> <p><b>New vocabulary</b> particle, vibration, percussion instrument, wind instrument, string instrument, frequency, volume, pitch, transverse wave, longitudinal wave, medium, vacuum</p>
Electricity	<ul style="list-style-type: none"> <li>Identify common appliances that run on electricity</li> <li>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</li> </ul>	<p><b>Pattern seeking</b> Observe patterns in circuit components for example, that bulbs get brighter if more cells are added. Observe that metals tend to be conductors of electricity</p> <p><b>Comparative/fair testing</b> Test which materials can be used to close a gap in a circuit. Compare materials that are insulators and conductors.</p>	<p><b>Previous vocabulary</b></p> <p>component, conductor, energy, insulator, particle, property, material</p> <p><b>New vocabulary</b> circuit, appliance, charge, electron, battery, cell, bulb, buzzer, switch, wire, current electricity, static electricity,</p>

	<ul style="list-style-type: none"> <li>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>Recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul>	<p><i>Note: Pupils should draw the circuit as a pictorial representation, not necessarily using conventional circuit symbols at this stage; these will be introduced in year 6.</i></p>	<p>negative terminal, positive terminal, chemical reaction, emit</p>
<p>States of matter</p>	<ul style="list-style-type: none"> <li>Compare and group materials together, according to whether they are solids, liquids or gases</li> <li>observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</li> <li>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>	<p><b>Classifying</b> Group and classify a variety of different materials.</p> <p><b>Observing over time</b> Observe and record evaporation over a period of time</p> <p><b>Research</b> They could research the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid.</p> <p><b>Comparative/fair testing</b> Explore the effect of temperature on substances such as chocolate, butter, cream. Investigate the effect of temperature on washing drying or snowmen melting.</p>	<p><b>Previous vocabulary</b></p> <p>absorption, dissolving, energy, evaporation, freezing, matter, melting, particle, temperature, ice, water, solid</p> <p><b>New vocabulary</b></p> <p>bond, condensation, evaporation, reversible, boiling point, melting point, liquid, gas, thermometer, water cycle, continuous precipitation, transpiration, surface run off process, sublimation</p>