



### National Curriculum Requirements of Science at KS2

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge.

#### Working scientifically

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:

- 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
- identifying differences, similarities or changes related to simple scientific ideas and processes
- Using straightforward scientific evidence to answer questions or to support their findings.

#### Our Intent

At Stanley Park Junior School, we recognise the important role science plays in our everyday lives, today and for the future. Children have a natural curiosity about the world around them and we endeavour to develop skills associated with scientific enquiry in order to foster these interests. These include questioning, research, observation and evaluation.

Our science lessons involve children getting hands-on with experiments and investigations to ensure they are not only fulfilling their own curiosities and questions, but also enjoying their learning and increasing their enthusiasm for the subject and their own findings. The children are constantly encouraged to use scientific vocabulary that is built upon as topics are revisited during their primary school experience. This increases their confidence and prepares them for their next stage of education and life experiences.

All children will have equal opportunity to reach their full potential across the science curriculum regardless of their race, gender, cultural background, ability or of any physical or sensory disability.

		Autumn Term		Spring Term		Summer Term
	Main Theme Of Learning	PLANTS	ROCKS	ANIMALS INCLUDING HUMANS	FORCES AND MAGNETS	LIGHT & REVISION FROM THE YEAR
Disciplinary Knowledge	<p><b>Working Scientifically</b></p>	<ul style="list-style-type: none"> <li>• Asking relevant questions</li> <li>• Making systematic and careful observations</li> <li>• Gather, record and classify data</li> </ul>	<ul style="list-style-type: none"> <li>• Set up simple practical enquiries</li> <li>• Present information in a variety of ways</li> </ul>	<ul style="list-style-type: none"> <li>• Gathering, recording, classifying and presenting data in a variety of ways</li> <li>• Recording findings on labelled diagrams and charts</li> </ul>	<ul style="list-style-type: none"> <li>• Asking relevant questions</li> <li>• Setting up simple practical activities</li> <li>• Using results to draw simple conclusions, make predictions and suggest improvements</li> <li>• Identifying differences, similarities and changes</li> </ul>	<ul style="list-style-type: none"> <li>• Answer relevant questions</li> <li>• Set up simple practical enquiries, comparative and fair tests</li> <li>• Make careful observations; take measurements using standard units and use a range of equipment.</li> <li>• Record findings using graphs and diagrams.</li> <li>• Report on findings.</li> <li>• identifying differences, similarities or changes related to simple scientific ideas and processes</li> </ul>
Substantive Knowledge	<p><b>Biology</b></p>	<ul style="list-style-type: none"> <li>• Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>• Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</li> <li>• Investigate the way in which water is transported within plants</li> </ul>		<ul style="list-style-type: none"> <li>• Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat;</li> <li>• Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>		

		<ul style="list-style-type: none"> <li>• Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>				
	<b>Chemistry</b>		<ul style="list-style-type: none"> <li>• Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties;</li> <li>• Describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>• Recognise that soils are made from rocks and organic matter.</li> </ul>			
	<b>Physics</b>				<ul style="list-style-type: none"> <li>• Compare how things move on different surfaces</li> <li>• Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</li> <li>• Observe how magnets attract or repel each other and attract some materials and not others</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise that they need light in order to see things and that dark is the absence of light</li> <li>• To notice that light is reflected from surfaces</li> <li>• Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>• Recognise that shadows are formed when the light from a light source is blocked by an opaque object</li> <li>• Find patterns in the way that</li> </ul>

					<ul style="list-style-type: none"> <li>• Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</li> <li>• Describe magnets as having 2 poles;</li> <li>• Predict whether 2 magnets will attract or repel each other, depending on which poles are facing.</li> </ul>	the size of shadows changes.
<b>Snap Science</b>	<b>Lesson topic and numbers</b>	<b>How does your garden grow?</b> 1 - enquiry skills 2, 6 - parts of a plant 4 - water transportation 9, 10 - seed dispersal	<b>Rock Detectives</b> 1, 4, 5 - comparing rocks 9, 10 - fossils 7 - how soil is made	<b>Amazing Bodies</b> 1, 2 - keeping ourselves healthy 4, 6, 8 - our bodies and exercise	<b>The Power of the Forces</b>  All lessons	<b>Can you see me?</b> 1 - What do we need to see? 2 - Which is the shiniest? Reflections 8, 9 - Sunglasses and protection from the sun 5, 6 - Shadows
<b>Vocabulary</b>	<b>New Vocabulary</b>	<b>Year 3</b>		<b>Year 3</b>		<b>Year 3</b>
		Plants, Light, Warmth, Water, Leaves, Roots, Stem, Grow	Rocks, soil, sand appearance, permeability, durability, surface, texture	Animal, Omnivore, Carnivore, Herbivore, Diet, Balance, Muscle, Skeleton, Bones, movement, support	Magnet, Non-magnetic, Metal, Attract, Repel, Reject, Material, Opposite, Compare, Friction	Light, Dark, Shadow, Transparent, Opaque, Translucent, Material, Light source, Straight
	<b>Review of Previously Learnt Vocabulary</b>	<b>Review Year 2</b>		<b>Review Year 2</b>		<b>Review Year 2</b>
		Seed, Bulb, Healthy, Water, Leaf, Flower, Stem, Branches	<u>Everyday materials</u> squash, bend, twist, stretch, material, suitable,	Survive, Water, Structure of humans/animals (eyes, nose etc) Exercise, Healthy, Herbivore, Carnivore, omnivore, adults	<b>All new vocabulary</b>	<u>Year 1 - Seasonal Changes</u> observe changes across the 4 seasons observe and describe weather associated with the seasons and how day length varies Pupils to be warned it is not safe to look at the sun - Even with dark glasses on

