

Science Knowledge and skills progression Map Cycle B

Class 3 Years 3/4						
Lower KS2 Working Scientifically.	<ul style="list-style-type: none"> • 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. 					
Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Electricity	Animals (Including nutrition)	Teeth and Digestion	Forces	States of matter	Plants- Functions and parts.
Key knowledge	<ul style="list-style-type: none"> • I can identify and name appliances that require electricity to function. • I Know the basic parts of a circuit, including cells, wires, bulbs, switches and buzzers. • I Know that for an appliance to work within a circuit, it has to be part of a complete loop with a battery. 	<ul style="list-style-type: none"> • I know that animals, unlike plants which can make their own food, need to eat in order to get the nutrients they need. • I know that food contains a range of different nutrients that are needed by the body to stay healthy – carbohydrates including sugars, protein, vitamins, minerals, fibre, fat, sugars, water. • I know that a piece of food will often provide a range of nutrients. • I know that humans and some other animals have skeletons and muscles which 	<ul style="list-style-type: none"> • I Know the basic parts of the digestive system in humans. • I Know and can identify the different types of teeth in humans and their simple functions. • I Know which organisms are producers, predators and prey and apply 	<ul style="list-style-type: none"> • I Know that magnets attract or repel each other and attract some materials and not others • I Know and can describe magnets as having two poles 	<ul style="list-style-type: none"> • I Know how to distinguish between a solid, liquid and gas. • I Know that some materials change state when they are heated or cooled. • I Know the temperatures at which ice, water and 	<ul style="list-style-type: none"> • I Know and can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • I Know the requirements of plants for life and growth (air, light, water,

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	<ul style="list-style-type: none"> • I Know that a switch in a circuit is a temporary break in an otherwise 'complete circuit'. • I know that all metals conduct electricity but some, such as aluminium and titanium, are relatively poor conductors. • I Know the recognised symbols used to represent components of a circuit and uses these to represent a circuit pictorially. 	<p>help them move and provide protection and support</p>	<p>to the construction and interpretation of food chains.</p>	<ul style="list-style-type: none"> • I Know whether two magnets will attract or repel each other, depending on which poles are facing. 	<p>water vapour change state.</p> <ul style="list-style-type: none"> • I Know the part played by evaporation and condensation in the water cycle. 	<p>nutrients from soil, and room to grow) and how they vary from plant to plant.</p> <ul style="list-style-type: none"> • I Know through investigation, the ways in which water is transported within plants
Key Skills	<ul style="list-style-type: none"> • Construct and investigate a range of circuits. • Investigate which materials can be used instead of wires to make a circuit . • Classify materials that 	<ul style="list-style-type: none"> • Classify food in a range of ways • Use food labels to explore the nutritional content of a range of food items. • Use secondary sources to find out the types of food that contain different nutrients 	<ul style="list-style-type: none"> • Construct and interpret a variety of food chains, identifying producers, predators and prey. • Can create food chains based on research. 	<ul style="list-style-type: none"> • Compare and group materials following magnetic testing, recording findings and use the outcome to 	<ul style="list-style-type: none"> • Observe closely and classify a range of solids and liquids. • Classify materials according to whether they 	<ul style="list-style-type: none"> • Observe what happens to plants over time when the leaves or roots are removed. • Observe the effect of putting cut white carnations or

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	<p>conduct electricity and those that don't following investigation and record findings.</p> <ul style="list-style-type: none"> ● Investigate the effect of a switch and combinations of switches in simple circuits. ● Investigate switches and consider variations for specific uses, such as a pressure switch for a burglar alarm. ● Apply their knowledge of conductors and insulators to design and make different types of switch. 	<ul style="list-style-type: none"> ● Use food labels to answer enquiry questions e.g. How much fat do different types of pizza contain? How much sugar is in soft drinks? ● Plan a daily diet contain a good balance of nutrients and record and present findings ● Explore the nutrients contained in fast food ● Use secondary sources to research the parts and functions of the skeleton ● Investigate pattern seeking questions such as ; Can people with longer legs run faster?; Can people with bigger hands catch a ball better? ● Compare, contrast and classify skeletons of different animals 	<ul style="list-style-type: none"> ● Identifies differences, and similarities of different types of teeth according to herbivore, omnivore and carnivore. ● Can record the teeth in their mouth (make a dental record). ● recreate the human stomach and observe representation of how food breaks down. ● Label the different parts of the digestive system. 	<p>answer questions about which materials are magnetic.</p> <ul style="list-style-type: none"> ● Make and investigate predictions on whether two magnets will attract or repel, depending on which poles are facing. 	<p>are solids, liquids and gases.</p> <ul style="list-style-type: none"> ● Observe a range of materials melting. ● Investigate how to melt ice more quickly. ● Observe the changes that are non-reversible relating (common ingredients) ● Investigate melting point of different materials. ● Explore freezing different liquids. ● Observe and measure temperature of icy water, tap water, hot water. 	<p>celery in coloured water.</p> <ul style="list-style-type: none"> ● Investigate what happens to plants when they are put in different conditions e.g. in darkness, in the cold, deprived of air, different types of soil, different fertilisers, varying amount of space.
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					<ul style="list-style-type: none">• Observe water evaporating and condensing.• Set up investigations to explore changing the rate of evaporation.• Use secondary sources to find out about the water cycle.• Using their data, can explain what affects how quickly a solid melts.• From their data, can explain how to speed up or slow down evaporation.• Present learning about the water cycle	
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					in a range of ways e.g. diagrams, explanation text, story of a water droplet.	
Enrichment opportunities	Westinghouse electricity visit.		Visit from dentist.			Observing plants on field and in planters.
Previous learning.	New learning	<p><u>EYFS</u> <u>Autumn 1</u> <u>All about me</u> I know about how I have changed from a baby to a child</p> <p><u>Summer 1</u> <u>Dinosaurs</u> I can identify different animals and their habitats.</p> <p><u>Spring 2</u> <u>Minibeasts</u> I can observe and sort minibeasts</p> <p><u>Summer 1</u> <u>Rumble in the jungle</u> I can name animals. I can compare animals in our country with animals in a different country.</p> <p><u>Summer 2</u> <u>Pirates and mermaids.</u> I can explain how to look after animals.</p>	<p><u>EYFS</u> <u>Throughout the year.</u> ● Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p> <p><u>Class 2 cycle A</u> <u>Autumn 2- Human growth</u> ● I Know about general hygiene and its importance and can state examples of hygienic practice.</p> <p><u>Class 2 Cycle B</u></p>	New Learning	<p><u>Class 2 Cycle A</u> <u>Summer- Materials</u> I can distinguish between an object and the material from which it is made I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock I can describe the simple physical properties of a variety of everyday materials</p>	<p><u>EYFS</u> <u>Spring 2</u> <u>Growing plants</u> I can plant seeds and observe what happens. I can observe growth. I can identify what plants need to survive.</p> <p><u>Class 2 Cycle A</u> <u>Spring</u> I Know and can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p>

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		<p>I can name animals that live under the sea.</p> <p><u>Class 2 Cycle A</u> <u>Human Growth</u></p> <ul style="list-style-type: none"> ● I know that humans have offspring. ● I understand the basic needs for human growth and survival. ● I Know that exercise is important to humans and can explain why. ● I Know the different food groups and the benefits of each as part of a healthy, balanced diet ● I Know which food groups common foods belong to. ● I Know about general hygiene and its importance and can state examples of hygienic practice. <p><u>Class 2 Cycle B</u> <u>Autumn</u> <u>Animals including humans.</u></p> <ul style="list-style-type: none"> ● I know that humans have offspring. ● I understand the basic needs for human growth and survival. ● I Know that exercise is important to humans and can explain why. 	<p><u>Spring 2-Animals</u></p> <ul style="list-style-type: none"> ● I Know and can identify and name a variety of common animals that are carnivores, herbivores and omnivores. 		<p>I know why and how the properties of materials make them particularly useful for specific purposes (for example, stone is a hard, heavy and durable material so is useful for construction of buildings). I know how the properties of a material can make it useful for a range of different purposes (for example, plastic is waterproof so it can be used to coat fabric for clothing but can also be used for outdoor play equipment) I know that different materials can share the same</p>	<ul style="list-style-type: none"> ● I Know and can identify and describe the basic structure of a variety of common flowering plants, including trees. ● I Know that plants may grow from either seeds or bulbs. ● I knows that seeds and bulbs can germinate and then grow into seedlings and then continue to grow into mature plants. ● I Know that mature plants may have flowers which then develop into seeds, berries and fruits etc. ● I know that seeds and bulbs need to be planted at particular times
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		<ul style="list-style-type: none"> ● I Know the different food groups and the benefits of each as part of a healthy, balanced diet ● I Know which food groups common foods belong to. ● I Know about general hygiene and its importance and can state examples of hygienic practice. 			<p>properties (for example glass and plastic can both be transparent). I Know and can explain why some materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard are particularly suited to specific purposes I Know how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p> <ul style="list-style-type: none"> ● I Know the difference between materials that are transparent, translucent and opaque. 	<p>of the year and will germinate and grow at different rates.</p> <ul style="list-style-type: none"> ● I know that some plants are better suited to growing in full sun and some grow better in partial and full shade. ● I Knows that plants need water, light and a suitable temperature to grow and stay healthy I Know and can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. ● I Know the requirements of plants for life and growth (air, light,
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						<p>water, nutrients from soil, and room to grow) and how they vary from plant to plant.</p> <ul style="list-style-type: none">● I Know through investigation, the ways in which water is transported within plants● I Know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
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