

Science Knowledge and skills progression Map Cycle A

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	Forces	Light	Rocks and Fossils	Sound	Life cycles	Habitats
Key knowledge	<ul style="list-style-type: none"> • I Know that friction affects the way that things move on different surfaces. • I Know that some forces need contact between two objects. 	<p>I Know that light is needed to see things and that dark is the absence of light</p> <ul style="list-style-type: none"> • I Know that light is reflected from surfaces • I know that light from the sun can be dangerous and that there are ways to protect the eyes • I know that shadow are formed when the light from a light source is blocked by an opaque object. • I Know and can explain some of the reasons why the size of shadows changes. 	<ul style="list-style-type: none"> • I know that Rock is a naturally occurring material. • I know that there are different types of rock e.g. sandstone, limestone, slate etc. which have different properties. • I know that rocks can be hard or soft. They have different sizes of grain or crystal. • I know that rocks can be different shapes and sizes (stones, pebbles, boulders) and some absorb water. 	<ul style="list-style-type: none"> • I Know how sounds are made, associating some of them with vibrating. • I Know how sound travels from a source to our ears. • I Know the correlation between pitch and the object. 	<ul style="list-style-type: none"> • I Know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. 	<ul style="list-style-type: none"> • I Knows that living things can be grouped in a variety of ways. • I Know and can name living things in a range of habitats. • I Know and can relate the key adaptational features of an organism to the

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		<ul style="list-style-type: none"> ● I Know how the shadows of transparent, opaque and translucent materials vary. 	<ul style="list-style-type: none"> • I Knows in simple terms, how fossils are formed when things that have lived are trapped within rock. • I Know that soils are made from rocks and organic matter 	<ul style="list-style-type: none"> • I Know the correlation between the volume of a sound and the strength of the vibrations that produced it. • I Know that sounds get fainter as the distance from the sound source increases. 		<p>known features of its habitat.</p> <ul style="list-style-type: none"> ● I Know and can give examples of how an environment may change both naturally and due to human impact.
Key Skills	<ul style="list-style-type: none"> • Record and report on findings from investigations, involving how things move on different surfaces • Ask scientific questions related to how objects move on different surfaces. • Record findings using scientific 	<ul style="list-style-type: none"> ● Observe and identify changes to the size and orientation of shadows, relative to their proximity to the light source. ● Observe and identify the difference in shadows of opaque, translucent and transparent objects/materials. ● Observe how shadows are formed and affected by different circumstances. 	<ul style="list-style-type: none"> • Can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • Can devise tests to explore the properties of rocks and use data to rank the rocks. • Can link rocks changing over time with their properties e.g. soft rocks 	<ul style="list-style-type: none"> ● Experiment with at least three different instruments to observe and explore volume and pitch. ● Make predictions and draw conclusions about the pitch 	<p>Spot flowers, seeds, berries and fruits outside throughout the year.</p> <ul style="list-style-type: none"> ● Observe flowers carefully to identify the pollen ● Observe flowers being 	<ul style="list-style-type: none"> ● Observe plants and animals in different habitats throughout the year and use recordings to compare and contrast the living things observed.

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	<p>language and diagrams.</p>	<ul style="list-style-type: none"> ● To notice that light can be reflected off surfaces and Replace with 'investigate the visibility of different materials (eg shiny; foil, mirrors and matt; sugar paper) in a darker environment according to which reflect most light.' ● Investigate the size of shadows according to times of day and year, by tracing shadows outside and comparing differences. ● Classify materials according to opaque, transparent and translucent. ● Use oral and written explanations to report on why shadows are formed and how the length and size of a shadow can be changed. ● Investigates questions related to an object and the shadow it will cause. 	<p>get worn away more easily.</p> <ul style="list-style-type: none"> ● Can present in different ways their understanding of how fossils are formed e.g. in role play, comic strip, chronological report, stop-go animation etc ● Can identify plant/animal matter and rocks in samples of soil. ● Can devise a test to explore the water retention of soils. 	<p>and volume of sounds.</p> <ul style="list-style-type: none"> ● Note how vibrations make sounds of different volumes and travel to our ears. ● Identify and show how sound travels through particles and into the ear. ● Make own instruments that produce a range of pitches. 	<p>visited by pollinators e.g. bees and butterflies in the summer.</p> <ul style="list-style-type: none"> ● Observe seeds being blown from the trees e.g. sycamore seeds. ● Research different types of seed dispersal. ● Classify seeds in a range of ways including by how they are dispersed. ● Can explain observations made during investigations. ● Can look at the features of seeds to decide on their method of dispersal. ● Can draw and label a 	<ul style="list-style-type: none"> ● Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. ● Classify living things found in different habitats based on their features. ● Create a simple identification key based on observable features. ● Use research to explore human impact on the local environment e.g. litter, tree planting. ● Use secondary sources to find out about how environments
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					<p>diagram of their created flowering plant to show its parts, their role and the method of pollination and seed dispersal.</p>	<p>may naturally change.</p> <ul style="list-style-type: none"> ● Use secondary sources to find out about human impact, both positive and negative, on environments and write a report on this.
Enrichment opportunities		Use playground to record length of shadows across the day.		Make a musical instrument.	Observe plants on the field and in the planters.	
Previous learning-	New learning	<p>EYFS- <u>Throughout the year</u></p> <ul style="list-style-type: none"> ● Understands some important processes and changes in the natural world around them, including the seasons and changing states of matter. <p><u>Class 2 Cycle A</u> <u>Spring 1- Seasons</u></p> <ul style="list-style-type: none"> ● I Know when each of the four seasons occurs ● I Know what the features of Spring are and what happens to trees in this season 	New learning	New learning	<p>EYFS- <u>Spring 2 Cycle A</u> <u>Growing plants</u></p> <p>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- Plants</u></p> <p>I Know and can identify and name a variety of common</p>	<p>EYFS- <u>Summer 1</u> <u>Dinosaurs</u></p> <p>I can identify different animals and their habitats. <u>Spring 2</u> <u>Minibeasts</u></p> <p>I can observe and sort minibeasts</p> <p><u>Class 2 Cycle B</u> <u>Summer 1- Habitats</u></p> <ul style="list-style-type: none"> ● I Know and can explain the differences

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		<ul style="list-style-type: none"> ● Knows that days are longer in summer (sunshine hours) than in winter ● Observe changes across the four seasons <p><u>Summer 2 (Cycle A)</u></p> <ul style="list-style-type: none"> ● I Know about and can describe weather in different seasons over a year. ● I Know and can describe the features of different seasons and how they change through the year. 			<p>wild and garden plants, including deciduous and evergreen trees</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 	<p>between things that are living, dead, and things that have never been alive</p> <ul style="list-style-type: none"> ● I Know that most living things live in habitats to which they are suited ● I Know and can describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other ● I Know and can name a variety of plants and animals in their habitats, including micro-habitats ● I Know and can describe how animals
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					<p>into seeds, berries and fruits etc.</p> <ul style="list-style-type: none">● I know that seeds and bulbs need to be planted at particular times of the year and will germinate and grow at different rates.● 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 <p>I Know and can identify and describe the functions of different parts of flowering</p>	<p>obtain their food from plants and other animals, using the idea of a simple food chain, and identify and make the different sources of food.</p>
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					<p>plants: roots, stem/trunk, leaves and flowers.</p> <ul style="list-style-type: none">● I Know 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.● 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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