



Science
Progression of Knowledge and Skills

*Please note – all themes covered in science must include an investigation element and scientific enquiry alongside the knowledge content

	<u>EYFS Nursery</u>	<u>EYFS Reception</u>	<u>KS1</u>	<u>Year 1</u>			<u>Year 2</u>		
Term				Autumn	Spring	Summer	Autumn	Spring	Summer
Autumn: Song and Rhyme Spring: Once upon a time Summer: Amazing Animals	Autumn: Once upon a time Which materials keep us dry? Spring: Ready steady grow How do plants grow? Summer: All creatures great and small What does an animal need to survive?	Autumn: Once upon a time Which materials keep us dry? Spring: Ready steady grow How do plants grow? Summer: All creatures great and small What does an animal need to survive?	Overarching Theme	Once Upon a time Which materials keep us dry?	Ready steady grow How do plants grow?	All creatures great and small What does an animal need to survive?	Homes and Habitats What lives here and why?	You're bananas Can we grow bananas in England?	Science link through History key question. Materials.
Working Scientifically (additionally see assessment criteria at the foot of the document)	In EYFS children will be encouraged to play, observe and ask. Developing early enquiry skills. What do you see? What do you wonder? Children will be encouraged to carry out independent exploration. What do you think might happen if...? From an early age, children seek to explore and understand the world around them. Doing, thinking and talking about science is a key part of the EY curriculum. Talk in early science introduces and consolidates new vocabulary and provides opportunities	In EYFS children will be encouraged to play, observe and ask. Developing early enquiry skills. What do you see? What do you notice? What do you think? What do you wonder? Children will be encouraged to carry out independent exploration. Children will develop their observation skills thinking about: What does that remind you of? What do you think will happen next? What do you think might happen if...? From an early age, children seek to explore and understand the world around them. Doing, thinking and talking about science is a key part of the EY curriculum. Talk in early science introduces and consolidates new vocabulary and provides	During all topics and areas of study across Year 1 and Year 2 pupils should be involved in working scientifically through: <ul style="list-style-type: none"> - Asking simple questions and recognising that they can be answered in different ways - Observing closely, using simple equipment - Performing simple tests - Identifying and classifying - Using their observations and ideas to suggest answers to question - Gathering and recording data to help in answering questions - Pupils should also read and spell scientific vocabulary at a level consistent with their increasing word and spelling knowledge at key stage 1 <u>A KS1 scientist will:</u> I know how to ask simple scientific questions I know how to use simple equipment to make observations I know how to carry out simple tests I know how to identify and classify things I know how to explain to others what I have found out I know how to use simple data to answer questions						



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	for children to share ideas and build understanding.	opportunities for children to share ideas and build understanding.							
<p>Children in Nursery will be supported through science to:</p> <ul style="list-style-type: none"> -Learn new vocabulary. -Share their ideas with others. -Describe events in some detail. - Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. <p>Make comments about what they have heard.</p>		<p>Children in Reception will be supported through science to:</p> <ul style="list-style-type: none"> -Learn new vocabulary. -Ask questions to find out more and to check what has been said to them. -Articulate their ideas and thoughts in well-formed sentences. -Describe events in some detail. - Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. -Use new vocabulary in different contexts. <p>Make comments about what they have heard and ask questions to clarify their understanding</p>	Biology	<p><u>Plants:</u> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of common flowering plants, including trees.</p> <p><u>Animals (including humans):</u> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name of variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) Identify and name the basic parts of the human body and say which part of the body is associated with each sense.</p> <p><u>Living things and habitats:</u> Sort living and non-living things.</p>		<p><u>Plants:</u> Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p> <p><u>Animals (including humans):</u> Notice that animals, including humans, have offspring which grow into adults Find out about and describe the basic needs of animals, including humans for survival (water, air and food) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p><u>Living things and habitats:</u> Explore and compare the differences between things that are living, dead, and things that have never been alive Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including micro-habitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food</p>			
			Plants		<u>Spring 2</u> *I know and name a variety of			<u>Spring 2</u>	



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				<p>common wild and garden plants. *I know and name the petals, stem, leaves and root of a plant. *I know and name the roots, trunk, branches and leaves of a tree.</p>			<p>*I know how seeds and bulbs grow into plants *I know what plants need in order to grow and stay healthy (water, light and suitable temperature)</p>	
<p>Autumn: Bumblebees: Children will explore a range of material and discuss how and why we might use them.</p> <ul style="list-style-type: none"> Explore different materials freely to develop ideas about how to use them and what to make. Join different materials and explore textures. <p>Honeybees: Explore materials with different properties. Explore natural materials inside and outside.</p>	<p>Autumn 2: Children will explore a range of materials making observations on each materials properties.</p> <ul style="list-style-type: none"> Describe what they see, hear and feel while they are outside. 	<p>Animals, including humans</p>		<p>Spring 1 I know how to name the human body parts that I can and match senses to body parts.</p>	<p>Summer 2 *I know how to name parts of the human body that I can see *I know how to link the correct part of the human body to each sense. *I know and name a variety of animals including fish, amphibians, reptiles, birds and mammals. *I classify and know animals by what they eat (carnivore, herbivore and omnivore)</p>	<p>Autumn 1 *I know the basic stages in a life cycle for animals (including humans)</p>		<p>Summer 1 *I know why exercise, a balanced diet and good hygiene are important for human</p>



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					<p>*I know how to sort animals into categories (including fish, amphibians, reptiles, birds and mammals)</p> <p>*I know how to sort living and non-living things</p>			
		Living things and their habitats				<p>Autumn 1</p> <p>*I identify things that are living, dead and never lived</p> <p>*I know how a specific habitat provides for the basic needs of things living there (plants and animals)</p> <p>*I identify and name plants and animals in a range of habitats</p> <p>*I match living things to their habitat</p> <p>*I know how animals find their food</p> <p>*I name some different sources of food for animals</p>	<p>Spring 2</p> <p>*I identify and name plants and animals in a range of habitats</p>	



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							*I know and can explain a simple food chain. *I match living things to their habitat		
<p>Spring: Bumblebees:</p> <ul style="list-style-type: none"> Talk about what they see, using a wide range of vocabulary. Explore how things work <p>Honeybees:</p> <p>Explore materials with different properties. Explore natural materials inside and outside.</p>		<u>Chemistry</u>	<p><u>Everyday materials:</u> Distinguish between an object and the material it is made from Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday material on the basis of their simple physical properties</p>			<p><u>Everyday materials:</u> Identify and compare the suitability of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>			
	<p>Spring 1 On the go: Children will learn about their bodies and what we need to keep ourselves healthy. Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p>	Everyday materials	<p><u>Autumn 2</u> *I distinguish between an object and the material it is made from *I know the materials that an object is made from *I know the difference between wood,</p>						



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	<p>Spring 2 Ready steady grow What do plants need to grow? Children will learn about the changes that happen in the Summer including how plants grow. They will explore what plants need to grow: Explore the natural world around them, making observations and drawing pictures of animals and plants Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Understand the effect of changing seasons on the natural world around them.</p>		<p>plastic, glass, metal, water and rock *I know about the properties of everyday materials *I group objects based on the materials they are made from</p>					
		Uses of everyday materials						



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								<p>*I identify and name a range of materials including wood, plastic, metal, glass, brick, rock, paper and cardboard *I know why a material might or might not be used for a specific job *I know how materials can be changed by squashing, bending, twisting and stretching</p>
<p>Summer: Bumblebees:</p>		<p>Physics</p>	<p><u>Seasonal changes:</u> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies</p>			<p><u>Seasonal changes:</u> No specific content coverage however this will be referred to continually as the seasons change</p>		



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<p>Children will learn about a range of different animals. They will also look at plants and learn how to care for plants.</p> <ul style="list-style-type: none"> Plant seeds and care for growing plants. Explore and talk about the forces they feel. <p>Honeybees:</p> <p>Explore materials with different properties. Explore natural materials inside and outside.</p>	<p>Summer 2 All creatures great and small How are animal homes different to where I live?</p> <p>Children will learn about a range of different animals and learn about where different creatures live. They will be able to talk about the differences between their own environment and those of animals.</p> <p>-Explore the natural world around them. -Recognise some environments that are different to the one in which they live. -Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. -Understand the effect of changing seasons on the natural world around them.</p>	<p>Seasonal changes</p>	<p>*I observe and know about the change in the seasons *I name the seasons and know about the type of weather in each season</p>	<p>*I observe and know about the change in the seasons *I name the seasons and know about the type of weather in each season</p>	<p>*I observe and know about the change in the seasons *I name the seasons and know about the type of weather in each season</p>			
<p>Impact/key assessment criteria:</p>		<p>By the end of EYFS a Reception Scientist will be able to:</p> <p>-Make comments about what they have heard and ask questions to clarify their understanding</p> <p>-Manage their own basic hygiene and personal needs, including</p>	<p>Through investigating the knowledge and skills above a Year 1 Scientist will be able to:</p> <ul style="list-style-type: none"> - Know how to ask and answer simple scientific questions (eg. I ask questions such as: Why are flowers different colours? Why do some animals eat meat and others not?) - Know how to use simple equipment to make observations 	<p>Through investigating the knowledge and skills above a Year 2 Scientist will be able to:</p> <ul style="list-style-type: none"> - Know how to ask and answer simple scientific questions (eg Why do some trees lose their leaves in Autumn and others do not? How long are roots of tall trees? Why do some animals have underground habitats?) 				



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		<p> dressing, going to the toilet and understanding the importance of healthy food choices.</p> <p>-Explore the natural world around them, making observations and drawing pictures of animals and plants.</p> <p>- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</p> <p>-Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter</p>	<p>(eg. I use a hand lens to see things more clearly; I use binoculars to help me see animals that are in the distance)</p> <ul style="list-style-type: none"> - Know how to carry out simple tests (eg I set up a test to see which materials keeps things warmest; I know if my test has been successful and can say what I have learned) - Know how to identify and classify things (eg I group things according to a criteria I have been asked to consider like animals and plants) - Know how to explain to others what they have found out (eg I explain to someone what I have learnt from an investigation I have been involved with; I draw conclusions from the answers to the question I have asked) - Know how to use simple data to answer questions (eg I use measures (within Yr 1 mathematical limits) to help me find out more about the investigations I am considering) 	<ul style="list-style-type: none"> - Know how to use simple equipment to make observations (eg I use equipment such as thermometers and rain gauges to help observe changes too my local environment as the year progresses; I use microscopes that have been created for my age group to find out more about small creatures and plants.) - Know how to carry out simple tests (eg with help, I find out how old a tree is; I know how to set up a fair test and do so when finding out about how seeds grow best.) - Know how to identify and classify things (eg I group things according to given criteria, ie deciduous and coniferous trees; I classify items such as toys according to the material used to make them) - Know how to explain to others what they have found out (eg. I explain to someone why my investigation is fair; I draw conclusions from my fair tests and can explain what I have found out) - Know how to use simple data to answer questions (eg. I use measure (within Yr 2 mathematical limits) to help me find out more about the investigations I am engaged with
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