



# Science Content and Progression Overview

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4
Materials	<ul style="list-style-type: none"> <li>♣ I begin to know how food changes during cooking and baking.</li> <li>♣ I know that some objects float and some objects sink.</li> <li>♣ I know I can use different materials for making things.</li> <li>♣ I know how to change the shape of a malleable material.</li> <li>♣ I know how chocolate changes when it is heated.</li> <li>♣ I know about a reversible change e.g. water and ice.</li> <li>♣ I know about materials that protect us from the sun.</li> <li>♣ I know the science involved in making an ice-lolly.</li> </ul>	<ul style="list-style-type: none"> <li>♣ Know how balance and surface area affect floating.</li> <li>♣ Use natural materials from the environment to sculpt and build with.</li> </ul>	<ul style="list-style-type: none"> <li>♣ distinguish between an object and the material from which it is made</li> <li>♣ identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>♣ describe the simple physical properties of a variety of everyday materials</li> <li>♣ compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul>	<ul style="list-style-type: none"> <li>♣ identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>♣ find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>		<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>
Seasonal Change	<ul style="list-style-type: none"> <li>♣ I know some of the seasonal materials I will find outdoors in</li> </ul>	<ul style="list-style-type: none"> <li>♣ Know that the seasons change and that weather</li> </ul>	<ul style="list-style-type: none"> <li>♣ observe changes across the four seasons</li> </ul>			

	<p>September and October.</p> <ul style="list-style-type: none"> <li>♣ I know that leaves change colour in autumn.</li> <li>♣ I know when winter has arrived.</li> <li>♣ I know that my outdoor environment changes with the seasons, including during winter.</li> <li>♣ I know about some of the natural phenomena associated with cold weather.</li> <li>♣ I know when spring has arrived.</li> <li>♣ I know when summer has arrived.</li> <li>♣ I know that as the seasons change, my clothes change.</li> </ul>	<p>will make the environment change.</p> <ul style="list-style-type: none"> <li>♣ Know what the weather is.</li> <li>♣ Know the signs of each season.</li> <li>♣ Know where does the sun and moon go in the day and night time.</li> </ul>	<ul style="list-style-type: none"> <li>♣ observe and describe weather associated with the seasons and how day length varies.</li> </ul>			
<p>Animals including humans</p>	<ul style="list-style-type: none"> <li>♣ I know how to use my senses to explore unusual materials such as shaving foam.</li> <li>♣ I know the names of some animals that lay eggs.</li> <li>♣ I know about animals and their young.</li> </ul>	<ul style="list-style-type: none"> <li>♣ Know what the four senses are.</li> <li>♣ Know how to look after animals such as birds during the winter.</li> <li>♣ Who cares for our animals and us?</li> <li>♣ Describe what they see, hear, smell, touch.</li> </ul>	<ul style="list-style-type: none"> <li>♣ identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>♣ identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> </ul> <p>Science – key stages 1 and</p>	<ul style="list-style-type: none"> <li>♣ notice that animals, including humans, have offspring which grow into adults</li> <li>♣ find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>♣ describe the importance for humans</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,</li> </ul>	<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>

	<ul style="list-style-type: none"> <li>♣ I know how to use my senses to explore a hidden object.</li> <li>♣ I know the key features of the life cycle of a plant and an animal.</li> <li>♣ I know some ways that I have changed since being a baby.</li> </ul>		<p>2 8 Statutory requirements</p> <ul style="list-style-type: none"> <li>♣ describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</li> <li>♣ identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul>	<p>of exercise, eating the right amounts of different types of food, and hygiene</p>	<p>protection and movement.</p>	
Plants	<ul style="list-style-type: none"> <li>♣ I know the names of specific plants in our nursery garden.</li> <li>♣ I know how to plant seeds and care for growing plants in the nursery classroom and garden.</li> <li>♣ I know that seeds grown in different ways.</li> <li>♣ I know what happens when a vegetable is left to decay.</li> </ul>	<ul style="list-style-type: none"> <li>♣ Know what happens to fruit and vegetables over time.</li> <li>♣ Know if you can grow a stick.</li> <li>♣ Know where vegetables come from.</li> <li>♣ Know how to grow their own vegetables.</li> <li>♣ Plant some vegetables.</li> </ul>	<ul style="list-style-type: none"> <li>♣ Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>♣ Identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul>	<ul style="list-style-type: none"> <li>♣ observe and describe how seeds and bulbs grow into mature plants</li> <li>♣ find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul>	<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> <li>♣ explore the part that flowers play in the life cycle of flowering plants, including pollination, seed</li> </ul>	

					formation and seed dispersal.	
Living Things and their Habitats	<ul style="list-style-type: none"> <li>♣ I know how to respectfully observe an animal.</li> <li>♣ I know that collections of objects can be sorted in different ways (natural/man-made).</li> </ul>	<ul style="list-style-type: none"> <li>♣ Know what being nocturnal means.</li> <li>♣ Know what hibernation is.</li> <li>♣ Know what animals eat.</li> </ul>		<ul style="list-style-type: none"> <li>♣ explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>♣ 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</li> <li>♣ identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>♣ 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</li> </ul>		<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>
Rocks					<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> </ul>	

					<ul style="list-style-type: none"> <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>	
Light	<ul style="list-style-type: none"> <li>♣ I know when a shadow might appear and how it might change.</li> </ul>	<ul style="list-style-type: none"> <li>♣ Know how shadow and light work.</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>♣ 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 the size of shadows change.</li> </ul>	
Forces and Magnets	<ul style="list-style-type: none"> <li>♣ I know that magnets behave in particular ways.</li> <li>♣ I begin to know about pushes and pulls through some adult-led activity.</li> </ul>				<ul style="list-style-type: none"> <li>♣ compare how things move on different surfaces</li> <li>♣ notice that some forces need contact between two objects, but</li> </ul>	

	<ul style="list-style-type: none"> <li>♣ I know that scooters work differently on different surfaces.</li> </ul>				<p>magnetic forces can act at a distance</p> <ul style="list-style-type: none"> <li>♣ observe how magnets attract or repel each other and attract some materials and not others</li> <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 two poles</li> <li>♣ predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>	
Electricity	<ul style="list-style-type: none"> <li>♣ I know that some electrical devices use batteries, including torches.</li> <li>♣ I know about the job of an electrician.</li> </ul>	<ul style="list-style-type: none"> <li>♣ Know how electricity works.</li> </ul>				<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</li> </ul>

						<p>lamp is part of a complete loop with a battery</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>
Sound	<ul style="list-style-type: none"> <li>♣ I know that when I repeat actions they have an effect e.g. making sounds with musical instruments.</li> </ul>	<ul style="list-style-type: none"> <li>♣ Use various instruments to play carnival tunes.</li> <li>♣ Explore high and low pitch in the context of songs.</li> <li>♣ Know how to play different percussion instruments.</li> </ul>				<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>Working scientifically</p>	<ul style="list-style-type: none"> <li>♣ I know what a magnifying glass is for.</li> <li>♣ I know that science experiments can be exciting.</li> </ul>	<ul style="list-style-type: none"> <li>♣ Make comments about what they have heard and ask questions to clarify their understanding;</li> <li>♣ Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate;</li> </ul>	<ul style="list-style-type: none"> <li>♣ asking simple questions and recognising that they can be answered in different ways</li> <li>♣ observing closely, using simple equipment</li> <li>♣ performing simple tests</li> <li>♣ identifying and classifying</li> <li>♣ using their observations and ideas to suggest answers to questions</li> <li>♣ gathering and recording data to help in answering questions</li> </ul>	<ul style="list-style-type: none"> <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> <li>♣ identifying differences, similarities or changes related to simple scientific ideas and processes</li> <li>♣ using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>
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