

Knowledge Progression in Science at Foundation Stage

Science links	<div style="border: 1px solid black; padding: 2px; display: inline-block;"> Shaded = knowledge </div>	Explore collections of objects using their senses	Explore collections of objects, identifying similar and difference properties	Talks about similarities and differences between objects	Identifies changes they notice	Describes the changes they notice	<p>Explore the natural world around them, making observations and drawing pictures of animals and plants</p> <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter</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>
		Making simple observations about animals and plants	Develops an understanding of changes	Makes a basic representation of things they have observed e.g. I've drawn a rabbit.	Begins to correctly represent things that they have observed in their drawings	Begins to add more detail to their drawings	

Knowledge Progression in Science at Key Stage One

	Plants	Animals, including humans	Everyday Materials	Living Things and their Habitats	Forces	Light and Electricity
Year 1	<ul style="list-style-type: none"> ✓ identify and name a variety of common wild and garden plants, including deciduous and evergreen trees ✓ identify and describe the basic structure of a variety of common flowering plants, including trees. 	<ul style="list-style-type: none"> ✓ identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals ✓ identify and name a 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, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 	<ul style="list-style-type: none"> ✓ What material would make the best bedding for Mrs Bain's old cat? ✓ describe the simple physical properties of a variety of everyday materials ✓ compare and group together a variety of everyday materials on the basis of their simple physical properties ✓ distinguish between an object and the material from which it is made ✓ identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock 			
	<p>Seasonal Changes</p> <ul style="list-style-type: none"> ✓ How do the plants in our playground change throughout the year? observe simple changes associated with each season ✓ observe and describe weather associated with the four seasons and how day length varies. 					

<p style="text-align: center;">Year 2</p>	<ul style="list-style-type: none"> ✓ Who can grow the tallest sunflower? ✓ 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 	<ul style="list-style-type: none"> ✓ find out about and describe the basic needs of animals, including humans, for survival (water, food and air) ✓ describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene ✓ notice that animals, including humans, have offspring, which grow into adults. 	<ul style="list-style-type: none"> ✓ 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 	<ul style="list-style-type: none"> ✓ 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 microhabitats ✓ 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. 		
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Knowledge Progression in Science at Key Stage Two

	Plants	Animals, including humans	Everyday Materials	Living Things and their Habitats	Forces	Light and Electricity
Year 3	<ul style="list-style-type: none"> ✓ identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers ✓ 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 investigate the way in which water is transported within plants ✓ explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. ✓ associated with the four 	<ul style="list-style-type: none"> ✓ identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals ✓ identify and name a 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, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 	<ul style="list-style-type: none"> ✓ What material would make the best bedding for Mrs Bain's old cat? ✓ describe the simple physical properties of a variety of everyday materials ✓ compare and group together a variety of everyday materials on the basis of their simple physical properties ✓ distinguish between an object and the material from which it is made ✓ identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock 			

<p style="text-align: center;">Year 4</p>	<ul style="list-style-type: none"> ✓ Who can grow the tallest sunflower? ✓ 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 	<ul style="list-style-type: none"> ✓ find out about and describe the basic needs of animals, including humans, for survival (water, food and air) ✓ describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene ✓ notice that animals, including humans, have offspring, which grow into adults. 	<ul style="list-style-type: none"> ✓ 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 	<ul style="list-style-type: none"> ✓ 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 microhabitats ✓ 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>N/A</p>	<p>N/A</p>
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Year 5	N/A	describe the changes as humans develop to old age.	<ul style="list-style-type: none"> ✓ compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets ✓ know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution ✓ use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating ✓ give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic ✓ demonstrate that dissolving, mixing and changes of state are reversible changes 	<ul style="list-style-type: none"> ✓ describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird ✓ describe the life process of reproduction in some plants and animals 	<ul style="list-style-type: none"> ✓ explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object ✓ identify the effects of air resistance, water resistance and friction, that act between moving surfaces ✓ recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. ✓ describe the movement of the Earth, and other planets, relative to the Sun in the solar system ✓ describe the movement of the Moon relative to the Earth ✓ describe the Sun, Earth and Moon as approximately spherical bodies ✓ use the idea of the Earth's rotation to explain day and night and the apparent 	N/A
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			✓ explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda		movement of the sun across the sky.	
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Year 6		<ul style="list-style-type: none"> ✓ identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood ✓ recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function ✓ describe the ways in which nutrients and water are transported within animals, including humans 		<ul style="list-style-type: none"> ✓ describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences including microorganisms, plants and animals ✓ give reasons for classifying plants and animals based on specific characteristics <p><u>(evolution)</u></p> <ul style="list-style-type: none"> ✓ recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago ✓ recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents ✓ identify how living things are adapted to suit their environment in 		<ul style="list-style-type: none"> ✓ recognise that light appears to travel in straight lines ✓ use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye ✓ explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes ✓ use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. ✓ associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit ✓ compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness
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				different ways and that adaptation may lead to evolution.		of buzzers and the on/off position of switches ✓ use recognised symbols when representing a simple circuit in a diagram.
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