



Science Curriculum Overview

EYFS includes Nursery and Reception

KS1 and KS2 operate two cycles: **Cycle A** and **Cycle B**.

	EYFS	Y1/2	Y3/4	Y5/6
Knowledge	<u>Understanding the world</u>	<u>Animals including humans</u>	<u>Animals including humans</u>	<u>Animals including humans</u>
	<p><i>People and communities</i></p> <p>From 22 – 36 months:</p> <ul style="list-style-type: none"> • Has a sense of own immediate family and relations. • In pretend play, imitates everyday actions and events from own family and cultural background, e.g. making and drinking tea. • Beginning to have their own friends. • Learns that they have similarities and differences that connect them to, and distinguish them from, others. 	<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 	<ul style="list-style-type: none"> • 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 • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey. 	<ul style="list-style-type: none"> • Describe the changes as humans develop to old age • 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.



	<p>From 30 – 50 months:</p> <ul style="list-style-type: none"> • Shows interest in the lives of people who are familiar to them. • Remembers and talks about significant events in their own experiences. • Recognises and describes special times or events for family or friends. • Shows interest in different occupations and ways of life. • Knows some of the things that make them unique, and can talk about some of the similarities and differences in relation to friends or family. <p>From 40 – 60+ months:</p> <ul style="list-style-type: none"> • Enjoys joining in with family customs and routines <p><i>The World</i></p> <p>22 – 36 months:</p>	<p>associated with each sense.</p> <ul style="list-style-type: none"> • 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, food and air). • Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene. <p><u>Living things</u></p> <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 	<ul style="list-style-type: none"> • identify that humans and some other animals have skeletons and muscles for support, protection and movement. <p><u>Living Things and their habitats</u></p> <ul style="list-style-type: none"> • recognise that living things can be grouped in a variety of ways • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • recognise that environments can change and that this can sometimes pose dangers to living things. 	<p><u>All living things and their habitats</u></p> <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. • describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences,
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	<ul style="list-style-type: none"> • Enjoys playing with small-world models such as a farm, a garage, or a train track. • Notices detailed features of objects in their environment. <p>30 – 50 months:</p> <ul style="list-style-type: none"> • Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. • Can talk about some of the things they have observed such as plants, animals, natural and found objects. • Talks about why things happen and how things work. • Developing an understanding of growth, decay and changes over time. • Shows care and concern for living things and the environment. <p>40 – 60+ months:</p>	<ul style="list-style-type: none"> • 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><u>Seasonal changes</u></p> <ul style="list-style-type: none"> • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies. 	<p><u>Forces and Magnets</u></p> <ul style="list-style-type: none"> • compare how things move on different surfaces • notice that some forces need contact between two objects, but magnetic forces can act at a distance • observe how magnets attract or repel each other and attract some materials and not others 	<p>including microorganisms, plants and animals</p> <ul style="list-style-type: none"> • give reasons for classifying plants and animals based on specific characteristics. <p><u>Forces</u></p> <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
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	<ul style="list-style-type: none"> Looks closely at similarities, differences, patterns and change. <p><i>Technology</i></p> <p>22 – 36 months:</p> <ul style="list-style-type: none"> Seeks to acquire basic skills in turning on and operating equipment. Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car. <p>30 to 50 months:</p> <ul style="list-style-type: none"> Knows how to operate simple equipment. Shows an interest in technological toys with knobs or pulleys, or real objects. Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. Knows that information can be retrieved from computers. <p>40 to 60+ months:</p>	<p><u>Everyday uses of materials</u></p> <ul style="list-style-type: none"> 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 describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday materials on 	<ul style="list-style-type: none"> 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 describe magnets as having two poles predict whether two magnets will attract or repel each other, depending on which poles are facing. <p><u>States of matter</u></p> <ul style="list-style-type: none"> compare and group materials together, according to whether they are solids, liquids or gases 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) identify the part played by evaporation and condensation in the water cycle and 	<ul style="list-style-type: none"> recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. <p><u>Properties and changes of materials</u></p> <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
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	<ul style="list-style-type: none">• Completes a simple program on a computer.• Interacts with age-appropriate computer software.	<p>the basis of their simple physical properties.</p> <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	<p>associate the rate of evaporation with temperature.</p>	<ul style="list-style-type: none">• 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• 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.
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			<p>dangerous and that there are ways to protect their eyes</p> <ul style="list-style-type: none">• recognise that shadows are formed when the light from a light source is blocked by an opaque object• find patterns in the way that the size of shadows change.	<p>give out or reflect light into the eye</p> <ul style="list-style-type: none">• 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.
			<p><u>Electricity</u></p> <ul style="list-style-type: none">• identify common appliances that run on electricity• construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers• identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery	<p><u>Electricity</u></p> <ul style="list-style-type: none">• 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 of buzzers and the on/off position of switches• use recognised symbols when



			<ul style="list-style-type: none">• recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit• recognise some common conductors and insulators, and associate metals with being good conductors.	<p>representing a simple circuit in a diagram.</p> <p><u>Earth and Space</u></p> <ul style="list-style-type: none">• 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 movement of the sun across the sky.
			<p><u>Rocks</u></p> <ul style="list-style-type: none">• compare and group together different kinds of rocks on the basis of their appearance and simple physical properties• describe in simple terms how fossils are formed when things that have	<p><u>Evolution and inheritance</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



			<p>lived are trapped within rock</p> <ul style="list-style-type: none">• recognise that soils are made from rocks and organic matter.	<ul style="list-style-type: none">• recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents• identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
			<p><u>Sound</u></p> <ul style="list-style-type: none">• identify how sounds are made, associating some of them with something vibrating• recognise that vibrations from sounds travel through a medium to the ear• find patterns between the pitch of a sound and features of the object that produced it• find patterns between the volume of a sound and the strength of the vibrations that produced it• recognise that sounds get fainter as the	



			distance from the sound source increases.	
<p>Skills (working scientifically)</p> <p>These skills should be developed across both cycles.</p>		<ul style="list-style-type: none"> • Ask simple questions and recognise that they can be answered in different ways • Observe closely, using simple equipment • Perform simple tests • Identify and classify • Use their observations and ideas to suggest answers to questions • Gather and record data to help in answering questions 	<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 	<ul style="list-style-type: none"> • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • using test results to make predictions to set up further comparative and fair tests • reporting and presenting findings from



			<ul style="list-style-type: none">• 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.	<p>enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <ul style="list-style-type: none">• identifying scientific evidence that has been used to support or refute ideas or arguments
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