



	EYFS	KS1	LKS2	UKS2
Working Scientifically	During Pre-school and Reception , pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content.	During Years 1 and 2 , pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content.	During Years 3 and 4 , pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content.	During Years 5 and 6 , pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content.
	Choose the resources they need for their chosen activities and say when they do or don't need help.	Asking simple questions and recognising that they can be answered in different ways.	Asking relevant questions and using different types of scientific enquiries to answer them	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
	Know about similarities and differences in relation to places, objects, materials and living things.	Performing simple tests.	Setting up simple practical enquiries, comparative and fair tests.	Using test results to make predictions to set up further comparative and fair tests.
	Make observations of animals and plants.	Observing closely, using simple equipment (hand lenses and egg timers).	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	Taking measurements, using a range of scientific equipment (scales, stopwatches, spring balances), with increasing accuracy and precision, taking repeat readings when appropriate.
	Representing their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.	Gathering and record data to help in answer questions.	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	Reporting and presenting findings from 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.
		Identifying and classifying.	Identifying differences, similarities or changes related to simple scientific ideas and processes.	Identifying scientific evidence that has been used to support or refute ideas or arguments.
	Exploring a variety of materials , tools and techniques, experimenting with colour, design, texture, form and function	Using sorting circles, pictograms and pictures to illustrate.	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

	Select and use technology for particular purposes.		Using straightforward scientific evidence to answer questions or to support their findings.	
	Talk about features of their own immediate environment and how environments might vary from one another.	Using their observations and ideas to suggest answers to questions.	Using results to draw simple conclusions, make predictions for new values and suggest improvements and raise further questions.	Using test results to make predictions to set up further comparative and fair tests.
	Explain why some things occur and talk about changes.		Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	Reporting and presenting findings from 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.

Science Content

Pre-school	Children will Investigate wool and it's uses See Early Years map for full details	Children will learn colour mixing and investigations. See Early Years map for full details	Children will looking at our solar system and find out about planets. They will now that we live on planet Earth See Early Years map for full details	Children will look at 'New life' and consider what a baby is and its needs. Children will experience a Spring Walk and will be able to talk about seasonal changes. See Early Years map for full details	Children will look at Plants and how they grow: See Early Years map for full details	Children will learn about their senses and will carry out simple Investigations around their different senses: See Early Years map for full details
Reception	Investigating Materials: See Early Years map for full details	Objects and their Features: See Early Years map for full details	Patterns and changes in food: See Early Years map for full details	Investigating Materials: See Early Years map for full details	Changes and patterns in life cycles: See Early Years map for full details	Environments and Habitats. See Early Years map for full details

	KS1	LKS2	UKS2
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Plants	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.(Y1)</p> <p>Identify and describe the basic structure of a variety of common flowering plants.(Y1)</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.(Y2)</p> <p>Observe and describe how seeds and bulbs grow into mature plants.(Y2)</p>	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.(Y3)</p> <p>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. (Y3)</p> <p>Investigate the way in which water is transported within plants.(Y3)</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.(Y3)</p>	<p>Describe the life process of reproduction in some plants (and animals, including humans).(Y5)</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Living things and their habitats</p>	<p>Explore and compare the differences between things that are living, dead, and things that have never been alive.(Y2) 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.(Y2) Identify and name a variety of plants and animals in their habitats, including micro-habitats.(Y2) 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.(Y2)</p>	<p>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.(Y4) Recognise that environments can change and that this can sometimes pose dangers to living things.(Y4)</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.(Y4)</p>	<p>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.(Y6) Give reasons for classifying plants and animals based on special characteristics.(Y6) Describe the life process of reproduction in some plants and animals.(Y5)</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Animals including humans</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.(Y1) Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).(Y1) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.(Y1) Identify and name a variety of common animals that are carnivores, herbivores and omnivores(Y1) Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).(Y2) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.(Y2)</p>	<p>Identify that animals, including humans, 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.(Y3) Describe the simple functions of the basic parts of the digestive system in humans.(Y4) Identify the different types of teeth in humans and their simple functions.(Y4)</p>	<p>Describe the ways in which nutrients and water are transported within animals, including humans. (Y6) Identify and name the main parts of the circulatory system, and explain the functions of the heart, blood vessels and blood.(Y6) Describe the life processes of reproduction in some (plants) and animals.(Y5) Describe the changes as humans develop from birth to old age.(Y5) Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.(Y5)</p>

Materials, Rocks and States of Matter.	<p>Distinguish between an object and the material from which it is made.(Y1) Describe the simple physical properties of a variety of everyday materials.(Y1) Compare and group together a variety of everyday materials on the basis of their simple physical properties.(Y1)</p> <p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.(Y2)</p>	<p>Compare and group materials together, according to whether they are solids, liquids or gases.(Y4) 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). (Y4)</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.(Y4)</p> <p>Recognise that that soils are made from rocks and organic matter.(Y3) Describe in simple terms how fossils are formed when things that have lived are trapped within rock.(Y3) Compare and group together different kinds of rocks on the basis of their simple physical properties.(Y3)</p>	<p>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.(Y5) Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.(Y5)</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.(Y5) Demonstrate that dissolving, mixing and changes of state are reversible changes.(Y5) Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.(Y5) 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.(Y5)</p>
Forces and Motion	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.(Y2)	<p>Compare how things move on different surfaces.(Y3) Notice that some forces need contact between two objects, but magnetic forces can act at a distance.(Y3)</p>	<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.(Y5) Identify the effects of air resistance, water resistance and friction that act between moving surfaces.(Y5) Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.(Y5) Recognise that some mechanisms, including gears, pulleys, levers and springs, allow a smaller force to have a greater effect.(Y5)</p>

Light	Observe and name a variety of light sources and associate shadows with light source being blocked.(Y1)	<p>Notice that light is reflected from surfaces.(Y3)</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.(Y3)</p> <p>Recognise that they need light in order to see things and that dark is the absence of light.(Y3)</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object.(Y3)</p> <p>Find patterns that determine the size of shadows.(Y3)</p>	<p>Recognise that light appears to travel in straight lines.(Y6)</p> <p>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.(Y6)</p> <p>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.(Y6)</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.(Y6)</p>
Magnets		<p>Notice that some forces need contact between two objects and some forces act at a distance.(Y3)</p> <p>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.(Y3)</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.(Y3)</p> <p>Describe magnets as having two poles.(Y3)</p> <p>Predict whether two magnets will attract or repel each other depending on which poles are facing.(Y3)</p>	
Electricity		<p>Identify common appliances that run on electricity.(Y4)</p> <p>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.(Y4)</p> <p>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.(Y4)</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.(Y4)</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.(Y4)</p>	<p>Use recognised symbols when representing a simple circuit in a diagram.(Y6)</p> <p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.(Y6)</p> <p>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.(Y6)</p>

Earth and Space	Observe changes across the four seasons (Y1) Observe and describe weather associated with the seasons and how day length varies.(Y1)		Describe the movement of the Earth and other planets relative to the Sun in the solar system.(Y5) Describe the movement of the Moon relative to the Earth.(Y5) Describe the Sun, Earth and Moon as approximately spherical bodies.(Y5) Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.(Y5)
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