

# National Curriculum: Primary Science

Reception	Year 1	Year 2	Year3	Year 4	Year 5	Year 6
<b>Working scientifically</b>	<b>Working scientifically</b>	<b>Working scientifically</b>	<b>Working scientifically</b>	<b>Working Scientifically</b>	<b>Working scientifically</b>	<b>Working scientifically</b>
<b>Living things and their habitats</b> Explore the natural world around them, make observations and draw pictures of animals and plants		<b>Living things and their habitats</b> Living and dead, describe habitats, basic food chains		<b>Living things and their habitats</b> Group living things, use classification keys. Change in environment can threaten life	<b>Living things and their habitats</b> Animal - different life cycles, reproduction in plants and animals	<b>Living things and their habitats</b> Classifications including microorganisms, plants and animals.
<b>Plants</b> Explore the natural world around them, make observations and draw pictures of plants	<b>Plants</b> Name basic parts— identify common plants	<b>Plants</b> Seed/bulb grow into plants. What plants need	<b>Plants</b> Function - including how water is transported Life cycle of plants			
<b>Animals, including humans</b> Explore the natural world around them, make observations and draw pictures of animals	<b>Animals, including humans</b> Name common animals Name carnivores, herbivores, omnivores	<b>Animals, including humans</b> Animals have offspring, basic needs for survival. Importance of exercise, food hygiene.	<b>Animals, including humans</b> Need for right amount of nutrition Skeletons and muscles	<b>Animals, including humans</b> Basic function of digestive system. Teeth. Food chains	<b>Animals, including humans</b> How humans change with age	<b>Animals, including humans</b> Human circulatory system. Exercise, drugs and lifestyle.
			<b>Rocks</b> Group different rocks, how they are formed Fossils			<b>Evolution and inheritance</b> Fossil Offspring different to parents. Animal adaptation—Evolution
<b>Everyday materials</b> Name and understand changes in states of matter	<b>Everyday materials</b> Name. Describe and sort everyday materials	<b>Uses of every day materials</b> Uses of materials Changing shape of materials		<b>States of matter</b> Solids, Liquids, gases Change state, Evaporation/condensation	<b>Properties and changes of materials</b> Dissolve, separating, reversible changes. Change that produce new materials.	
			<b>Light</b> Need for light to see. How shadows are formed - size.	<b>Sound</b> How sound is made, travels. Pitch and volume		<b>Light</b> Travels in straight lines, How light enables us to see. How shadows are formed - shape
		<b>Forces and magnets</b> Compare different surfaces. Magnets			<b>Forces</b> Gravity, air/water resistance, friction. Levers, pulleys and gears	
<b>Seasonal Changes</b> Observe and understand changes across seasons in the past and now, drawing on their own experiences.	<b>Seasonal Changes</b> Observe weather and changes across seasons				<b>Earth and Space</b> Movement Earth, planets & moon. Night and day	
				<b>Electricity</b> Simple circuits, Switches Conductors and insulators		<b>Electricity</b> Brightness of lamp, volume of buzzer. Symbols circuit diagrams.

## LOWER KEYSTAGE 2

Working Scientifically	Biology Pupils should be taught to:	Chemistry Pupils should be taught to:	Physics Pupils should be taught to:
<p><u>Working scientifically</u> 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:</p> <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 improvement 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>	<p><u>Living things and their habitats</u></p> <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> <p><u>Animals, including human</u></p> <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, protection and movement.</li> <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. · Construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul> <p><u>Plants</u></p> <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 of flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>	<p><u>Rocks</u></p> <ul style="list-style-type: none"> <li>· compare and group together different kinds of rocks on the basis of their simple physical properties</li> <li>· recognise that soils are made from rocks and organic matter</li> <li>· describe in simple terms how fossils are formed when things that have lived are trapped within rock.</li> </ul> <p><u>States of matter</u></p> <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>	<p><u>Electricity</u></p> <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 lamp is part of a complete loop with a battery</li> <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> <p><u>Forces and magnets</u></p> <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 magnetic forces can act at a distance</li> <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> <p><u>Light</u></p> <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 a light source is blocked by a solid object</li> <li>· find patterns in the way that the size of shadows change</li> </ul> <p><u>Sound</u></p> <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 sound 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>

**KEY STAGE 1**

Working Scientifically	Biology Pupils should be taught to:	Chemistry Pupils should be taught to:	Physics Pupils should be taught to:
<p>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:</p> <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>	<p><u>Living things and their habitats</u></p> <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></ul> <p><u>Animals, including humans</u></p> <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><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><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 of exercise, eating the right amounts of different types of food, and hygiene</li></ul> <p><u>Plants</u></p> <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><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> <p><u>Habitats</u></p> <ul style="list-style-type: none"><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 micro-habitats</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>	<p><u>Everyday materials</u></p> <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><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>	<p><u>Seasonal changes</u></p> <ul style="list-style-type: none"><li>· observe changes across the four seasons</li><li>· observe and describe weather associated with the seasons and how day length varies.</li></ul>

## UPPER KEY STAGE 2

Working Scientifically	Biology Pupils should be taught to:	Chemistry Pupils should be taught to:	Physics Pupils should be taught to:
<p><u>Working scientifically</u></p> <p>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:</p> <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>	<p><u>Living things and their habitats</u></p> <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> <p><u>Animals, including human</u></p> <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; 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