

Science

In the EYFS, children develop a range of characteristics of effective learning through independent and adult-led learning, which complement 'Working Scientifically':

- engagement: discovery and exploring by being willing to 'have a go'
- motivation: staying involved and showing concentration, perseverance and enjoying achievements
- creating and thinking critically: having their own ideas; making connections and making choices about how to attempt things
- observation: talking about what they see, hear and feel exploring
- recording: drawing observations of animals and plants

Working scientifically during KS1 children should:

- 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

Working scientifically during years 3 and 4 children should:

- ask relevant questions and use different types of scientific enquiries to answer them
- set up simple practical enquiries, comparative and fair tests
- make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gather, record, classify and present data in a variety of ways to help in answering questions
- record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables
- report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identify differences, similarities or changes related to simple scientific ideas and processes
- use straightforward scientific evidence to answer questions or to support findings

Working scientifically during years 5 and 6 children should:

- plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- take measurements using a range of scientific equipment with increasing accuracy and precision, taking repeat readings where appropriate
- record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- use test results to make predictions to set up further comparative and fair tests

- report and present findings from enquiries including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations
- identify scientific evidence that has been used to support or refute ideas or arguments

	Autumn	Spring	Summer
EYFS	<p>Animals including humans:</p> <ul style="list-style-type: none"> • explain/describe healthy food, the importance of cleaning teeth and the ways we can keep healthy and feel well <p>Living things and their habitats:</p> <ul style="list-style-type: none"> • understand and talk about <ul style="list-style-type: none"> ○ how plants and animals such as caterpillars grow and change ○ why animals are nocturnal ○ which animals love the coldest climates • know which animals and mini-beasts are in our school grounds • understand the need to respect and care for the natural environment and all living things <p>Seasonal change:</p> <ul style="list-style-type: none"> • talk about the weather and how it changes the outdoors, including leaves on the trees and how frost and ice appears/melts • talk about how buds and seeds grow and change in spring <p>Plants:</p> <ul style="list-style-type: none"> • understand and talk about how plants grow and change, including through seasonal change as above • understand the need to respect and care for the natural environment and all living things <p>Materials:</p> <ul style="list-style-type: none"> • identify and name a variety of everyday materials such as wood, plastic, glass, metal, water, rock • begin to understand similarities and differences between materials • begin to use vocabulary to identify different materials such as soft, hard, bendy, squashy, wet 		

<p>Coombe + Lake Y1</p> <p>YEAR A</p>	<p>Animals including humans</p> <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 	<p>Living things and their habitats</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 identify and name a variety of plants and animals in their habitats, including micro-habitats 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>Plants</p> <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 <p>Everyday Materials</p> <ul style="list-style-type: none"> distinguish between an object and the materials 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 the basis of their simple physical properties
<p>Seasonal Change</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>Coombe + Lake Y1</p> <p>YEAR B</p>	<p>Animals including humans</p> <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 	<p>Animals including humans</p> <ul style="list-style-type: none"> identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense <p>Uses of Materials</p> <ul style="list-style-type: none"> identify and compare the uses 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>Plants</p> <ul style="list-style-type: none"> 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

Forest	<p>Animals including humans</p> <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 • identify that humans and some animals have skeletons and muscles for support, protection and movement <p>Forces and Magnets</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 • 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>Rocks</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 lived are trapped within rock • recognise that soils are made from rocks and organic matter 	<p>Plants</p> <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 lifecycle of flowering plants, including pollination, seed formation and seed dispersal <p>Light</p> <ul style="list-style-type: none"> • recognise that they need light in order to see things and that dark is the absence of light • notice that light is reflected from surfaces • recognise that light from the sun can be dangerous and that there are ways to protect their eyes • recognise that shadows are formed when the light from a light source is blocked by a solid object • find patterns in the way that the size of shadows change
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Spring	<p>Sound</p> <ul style="list-style-type: none"> • identify how sounds are made associating 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>States of Matter</p> <ul style="list-style-type: none"> • compare and group materials together according to whether they are solid, liquid or gas • 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 • identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature <p>Animals, including humans</p> <ul style="list-style-type: none"> • 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 	<p>Earth and Space</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 apparent movement of the sun across the sky <p>Electricity</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 • 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>Living things and their habitats</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 environment⁶ • recognise that environments can change and this can sometimes pose dangers to living things • describe the differences in the lifecycles of a mammal, an amphibian, an insect and a bird • describe the life processes of reproduction in some plants and animals <p>Forces</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 forces • recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect
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	<p>Living things and their habitats</p> <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 micro-organisms, plants and animals• give reasons for classifying plants and animals based on specific characteristics		
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