

Science Curriculum

	Term 1 The Weather	Term 2 Light and Dark	Term 3 Materials	Term 4 Growing plants	Term 5 Hatching chicks	Term 6
Rec	<p>Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.</p> <p>Looks closely at similarities, differences, patterns and change.</p>	<p>Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.</p> <p>Looks closely at similarities, differences, patterns and change.</p>	<p>Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.</p> <p>Looks closely at similarities, differences, patterns and change.</p> <p>ELG: know about similarities and differences in relation to ... materials ...</p>	<p>Can talk about some of the things they have observed such as plants, animals, natural and found objects.</p> <p>Talks about why things happen and how things work.</p> <p>Developing an understanding of growth, decay and changes over time.</p> <p>Shows care and concern for living things and the environment.</p> <p>ELG: make observations of ... plants and explain why some things occur, and talk about changes.</p>	<p>Can talk about some of the things they have observed such as plants, animals, natural and found objects.</p> <p>Talks about why things happen and how things work.</p> <p>Developing an understanding of growth, decay and changes over time.</p> <p>Shows care and concern for living things and the environment.</p> <p>ELG: know about similarities and differences in relation to ... living things.</p> <p>ELG: make observations of animals ... and explain why some things occur, and talk about changes.</p> <p>CC/PD: Hatch eggs CC/PD: Look after an animal</p>	<p>TBC</p> <p>ELG: talk about the features of their own immediate environment and how environments might vary from one another.</p>
Year 1	<p>Animals, including humans</p> <p>identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>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> <p>Key Scientists: Chris Packham (animal conservationist); Carl Hagenbeck (zoos); Lind Brown Buck (mammal studies)</p>			<p>Plants</p> <p>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p> <p>identify and describe the basic structure of a variety of common flowering plants, including trees</p> <p>Key Scientists: Beatrix Potter (author and botanist)</p> <p>CC/PD: Gardening</p>	<p>Everyday materials</p> <p>distinguish between an object and the material from which it is made</p> <p>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>describe the simple physical properties of a variety of everyday materials</p> <p>compare and group together a variety of everyday materials on the basis of their simple physical properties</p> <p>Key Scientists: Ole Kirk Christiansen (inventor of Lego); Charles Mackintosh (inventor of waterproof coat)</p>	<p>Seasonal changes</p> <p>observe changes across the 4 seasons</p> <p>observe and describe weather associated with the seasons and how day length varies</p> <p>Key Scientists: Holly Green (meteorologist); George James Symons (inventor of rain gauge)</p>
Year 2	<p>Animals, including humans</p> <p>notice that animals, including</p>		<p>Uses of everyday materials</p> <p>identify and compare the</p>		<p>Plants</p> <p>observe and describe how</p>	<p>Living things and their habitats</p>

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	<p>humans, have offspring which grow into adults</p> <p>find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p> <p>Key Scientists: Louis Pasteur (germs)</p>		<p>suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular use</p> <p>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p> <p>Key Scientists: John MacAdam (road-builder); Isambard Kingdom Brunel (engineer)</p>		<p>seeds and bulbs grow into mature plants</p> <p>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p> <p>Key Scientists: Jane Colden (botanist); Tim Smit (Eden Project)</p>	<p>explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>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</p> <p>identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>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> <p>Key Scientists: Liz Bonnin (conservationist); Rachel Carson (marine biologist)</p> <p>CC/PD: Make a wildlife home</p>
Year 3	<p style="text-align: center;">Plants</p> <p>identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers</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</p> <p>investigate the way in which water is transported in plants.</p> <p>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p> <p>Key Scientists: Jan Ingenhousz (photosynthesis); George Washington Carver (agricultural scientist)</p> <p>CC/PD: Gardening</p>	<p style="text-align: center;">Forces and Magnetism</p> <p>compare how things move on different surfaces</p> <p>notice that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>observe how magnets attract or repel each other and attract some materials and not others</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</p> <p>describe magnets as having two poles</p> <p>predict whether two magnets will attract or repel each other, depending on which poles are facing</p> <p>Key Scientists: William Gilbert (magnetism); Andre Marie Ampere (founder of electro-magnetism)</p>	<p style="text-align: center;">Animals, including humans</p> <p>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</p> <p>identify that humans and some other animals have skeletons and muscles for support, protection and movement</p> <p>Key Scientists: Adele Davis (20th Century nutritionist); Marie Curie (x-ray)</p>		<p style="text-align: center;">Rocks</p> <p>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>recognise that oils are made from rocks and organic matter</p> <p>Key Scientists: Mary Anning (fossils); Inge Lehmann (Earth's mantle); William Smith (geologist)</p>	<p style="text-align: center;">Light</p> <p>recognise that they need light in order to see things and that dark is the absence of light.</p> <p>recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>notice that light is reflected from surfaces</p> <p>find patterns in the way that the sizes of shadows change</p> <p>Key Scientists: James Clerk Maxwell (visible and invisible waves of light)</p>

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<p>Year 4</p>	<p>Animals including humans</p> <p>describe the simple functions of the basic parts of the digestive system in humans</p> <p>identify the different types of teeth in humans and their simple functions</p> <p>construct and interpret a variety of food chains, including producers, predators and prey</p> <p>Key Scientists: Ivan Pavlov (digestive system mechanisms); William Colgate (toothpaste)</p>	<p>Electricity</p> <p>identify common appliances that run on electricity</p> <p>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</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</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</p> <p>recognise some common conductors and insulators, and associate metals with being good conductors</p> <p>Key Scientists: Thomas Edison (inventor of the lightbulb)</p>	<p>States of matter</p> <p>compare and group materials together, according to whether they are solids, liquids or gases</p> <p>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)</p> <p>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p> <p>Key Scientists: Anders Celsius (temperature scale); Daniel Fahrenheit (temperature scale); Lord Kelvin (temperature scale)</p>		<p>Sound</p> <p>identify how sounds are made, associating some of them with something vibrating</p> <p>recognise that vibrations from sounds travel through a medium to the ear</p> <p>find patterns between the pitch of a sound and features of the object that produced it</p> <p>find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>recognise that sounds get fainter as the distance from the sound source increases</p> <p>Key Scientists: Aristotle (sound waves); Gailileo Galilei (frequency and pitch of sound waves); Alexander Graham Bell (inventor of the telephone)</p>	<p>Living things and their habitats</p> <p>recognise that living things can be grouped in a variety of ways</p> <p>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>Key Scientists: Cindy Looy (environmental change); Jaques Cousteau (marine biologist); Gerard Durrell (conservationist)</p>
<p>Year 5</p>	<p>Properties and changes of materials</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</p> <p>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>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</p> <p>Key Scientists: Ruth Benerito (wrinkle-free cotton); Stephanie Kwolek (inventor of Kevlar)</p>		<p>Earth and space</p> <p>describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>describe the movement of the Moon relative to the Earth</p> <p>describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p> <p>Key Scientists: Claudius Ptolemy and Nicolaus Copernicus (heliocentric vs geocentric); Neil Armstrong , Helen Sharman and Tim Peake (space travel)</p>	<p>Forces</p> <p>explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</p> <p>Key Scientists: Galileo Galilei (gravity); Isaac Newton (gravity); Archimedes (levers)</p>	<p>Living things and their habitats</p> <p>describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>describe the life process of reproduction in some plants and animals</p> <p>Key Scientists: David Attenborough (naturalist); Eva Crane (life cycle of bees)</p>	<p>Animals, including humans</p> <p>describe the changes as humans develop to old age</p> <p>Key Scientists: David Attenborough (naturalist)</p>
<p>Year 6</p>	<p>Light</p> <p>recognise that light appears to travel in straight lines</p> <p>use the idea that light travels in straight lines to explain objects</p>	<p>Electricity</p> <p>associate the brightness of a lamp or the volume of a buzzer with the number and voltag of cells used in the circuit</p>	<p>Living things and their habitats</p> <p>describe how living things are classified into broad groups according to common observable characteristics and</p>	<p>Evolution and inheritance</p> <p>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of</p>	<p>Animals, including humans</p> <p>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood</p>	

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	<p>are seen because they give out or reflect light into the eye</p> <p>explain that we see things because light travels from light sources from our eyes or from light sources to objects and then to our eyes</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</p> <p>Key Scientists: Thomas Young (wave theory of light); Ibn Al-Haytham (light and our eyes); Stephen Hawking (black holes)</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</p> <p>use symbols when representing a simple circuit in a diagram</p> <p>Key Scientists: Alessandro Volta (electrical battery); Nicola Tesla (alternating currents); Steve Jobs (electronics in computing)</p>	<p>based on similarities and differences, including micro-organisms, plants and animals</p> <p>give reasons for classifying plants and animals based on specific characteristics</p> <p>Key Scientists: Carl Linnaeus (classifying plants and organisms); Libbie Hyman (classifying invertebrates)</p>	<p>years ago</p> <p>recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p> <p>Key Scientists: Charles Darwin and Alfred Russel Wallace (theory of evolution); Jane Goodall (chimpanzees); Mary Leakey (fossils)</p>	<p>vessels and blood</p> <p>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>describe the ways in which nutrients and water are transported within animals, including humans</p> <p>Key Scientists: Justus von Liebig (nutrition and metabolism); Sir Richard Doll (research on smoking); Leonardo Da Vinci (anatomy)</p>	
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