

Yearly Overview 2022-23 Science

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Rec	Animals Inc Humans	Seasonal Changes	Materials Inc Changing Materials	Forces	Living things in their Habitats	Animals Exc Humans
	Name parts of the body Observe changes within ourselves Explore the natural world around us Begin to identify some mini-beasts in our outdoor area To observe autumnal changes	Pumpkins – explore seeds found inside Observe ice if weather permits. To observe Winter changes To observe our natural world and the animals and minibeasts living there Describe what they see hear and feel outside	Investigate ice/water & melting/freezing– save the carrots! Making medicines/potions –mixing coloured water & observing changes Explore magnets and materials Find out what it means to be a healthy human	Investigate floating and sinking Observe and talk about features in the garden and local park. Life cycle of plants/flowers. Changes in Spring Chocolate Easter cakes –observe changes to chocolate when melting & cooling	Similarities and differences of animals. To know how to care for animals Observe to find out about different habitats. Life cycle of plants/flowers. Identify and talk mini-beats in our environment Key Scientist Animal behaviour and welfare scientist – Jemma Dias	Talk about and observe the growth and change of seeds, beans. Life cycle of a chick, butterfly. The life cycle of a seed. Know some differences of Morecambe from the past/present How have I grown and changed? Key Scientist Plant Biologist – Angie Burnett

Year 1	Animals Key Scientist: Dr Kelly Blacklock Veterinary Surgeon	Seasons Key Scientist: Dr Fangxian Fang: Earth Scientist	Materials Key Scientist:	Plants Key Scientist:	Plants Key Scientist:	Animals including Humans Key Scientist:
	<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>Observe changes across the four seasons (ongoing)</p> <p>Observe and describe weather associated with the seasons and how day length varies (ongoing)</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>Identify and name a variety of 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>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>Working Scientifically</p>	<p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p>	<p>Gathering and recording data to help in answering questions.</p>	<p>Observing closely, using simple equipment such as egg timers and hand lenses.</p> <p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Performing simple tests</p>	<p>Observing closely, using simple equipment gathering and recording data to help in answering questions.</p>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Performing simple tests</p>	<p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Asking simple questions and recognising that they can be answered in different ways</p>
<p>Year 2</p>	<p>Animals including humans Key Scientist: Dr Rachel Croft Bio Medicine</p>	<p>Animals including humans Key Scientist: Laura Benson Research Assistant in Epigenetics</p>	<p>Materials Key Scientist: Rafsan Chowdhury Mechanical Engineer</p>	<p>Living things and their habitat Key Scientist: Telma Laurentino Evolutionary Biologist</p>	<p>Living things and their habitat Key Scientist: Dr Ben Woodcock Ecological Entomologist</p>	<p>Plants Key Scientist: Dr Angie Burnett Plant Biologist</p>
	<p>Notice that animals, including 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>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and</p>	<p>Explore and compare the differences between things that are living, dead, and things</p>	<p>Identify and name a variety of plants and animals in their habitats, including micro-habitats</p>	<p>Observe and describe how seeds change and bulbs grow into mature plants Find out and describe how</p>

	Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene		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	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	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.	plants need water, light and a suitable temperature to grow and stay healthy
Working Scientifically	Identifying and classifying Using their observations and ideas to suggest answers to questions	Asking simple questions and recognising that they can be answered in different ways Gathering and recording data to help in answering questions.	Observing closely, using simple equipment Asking simple questions and recognising that they can be answered in different ways Performing simple tests	Observing closely, using simple equipment Gathering and recording data to help in answering questions.	Observing closely, using simple equipment Asking simple questions and recognising that they can be answered in different ways	Identifying and classifying Performing simple tests Using their observations and ideas to suggest answers to questions
Year 3	Plants Dr Angie Burnett, Plant Biologist	Rocks Dr Anjana Khatwa Earth scientist	Light and Shadows Professor Colin Webb, Professor of laser Physics	Forces and Magnets	Animals including Humans	Animals including Humans

	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, 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 within plants</p> <p>Explore the part that flowers play in</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 soils are made from rocks and organic matter</p>	<p>Recognise that they need light in order to see things and that dark is the absence of light</p> <p>Notice that light is reflected from surfaces</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 a solid object</p>	<p>Compare how things move on different surfaces</p> <p>Notice that some forces need contact between 2 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</p>	<p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement</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>

	the life cycle of flowering plants, including pollination, seed formation and seed dispersal		Find patterns in the way that the size of a shadow change	identify some magnetic materials Describe magnets as having 2 poles Predict whether two magnets will attract or repel each other, depending on which poles are facing		
Working Scientifically	<p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>	<p>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results</p>	<p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p> <p>Using straightforward scientific evidence to answer questions or to support their findings</p>	<p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>	<p>Asking relevant questions and using different types of scientific enquiries to answer them</p> <p>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p>	<p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>

Year 4	Electricity	Sound <small>LASER PHYSICIST - PROFESSOR COLIN WEBB</small>	Animals including humans Teeth and the digestive system	Animals including humans Teeth and the digestive system	Living things and their habitats	States of Matter
	<p>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.</p>	<p>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</p>	<p>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.</p>	<p>Interpret a variety of food chains, identifying producers, predators and prey.</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. Recognise that environments can change and that this can sometimes pose dangers to living things</p>	<p>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 associate the rate of evaporation with temperature.</p>

	In a simple series circuit recognise some common conductors and insulators, and associate metals with being good conductors.	fainter as the distance from the sound source increases.				
Working Scientifically	<p>Asking relevant questions and using different types of scientific enquiries to answer them</p> <p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>	<p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations</p>	<p>Using straightforward scientific evidence to answer questions or to support their findings</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and</p>	<p>Asking relevant questions and using different types of scientific enquiries to answer them</p> <p>Using straightforward scientific evidence to answer questions or to support their findings</p>	<p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p>

Year 5	Earth and Space Key Scientist: Vanessa Emeke-Okafur	Properties and changes of materials Key Scientist: Candy Jiang	Properties and changes of materials Key Scientist: Candy Jiang	Forces Key Scientist: Kath Waring	Living things and their habitats Key Scientist: Tanisha Allen	Animals including Humans Key Scientist: Cliana Kelly
	<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>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</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>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>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>Describe the changes as humans develop to old age.</p>

		<p>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>				
Working Scientifically	<p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings</p> <p>Reporting and presenting findings from enquiries,</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> <p>Recording data and results of</p>	<p>Using test results to make predictions to set up further comparative and fair tests</p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments</p>	<p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>Reporting and presenting findings</p>	<p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Identifying scientific evidence</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Recording data and results of increasing complexity using</p>

	including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	increasing complexity using scientific diagrams and labels, classification		from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	that has been used to support or refute ideas or arguments	scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
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Year 6	Living things and their habitats Key Scientist Carl Linnaeus	Animals including humans Key scientist Richard Doll	Evolution and Inheritance Key Scientist Charles Darwin	Electricity Key Scientist Mildred S Dresselhaus	Animals Including Humans Key Scientist William Harvey	Light and astronomy Key Scientist Euclid
	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	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	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago 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.	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 representing a simple circuit in a diagram	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	Recognise that light appears to travel in straight lines 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 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

				<p>Recognise that light appears to travel in straight lines</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</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.</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>Light - straight line, shadows,</p>		<p>explain why shadows have the same shape as the object that cast them</p>
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				reflectors and emitters.		
Working Scientifically	<p>Group and classify animals and plants in the local environment. Research unfamiliar animals and plants and classify.</p> <p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter</p>	<p>Research the relationship between diet, exercise, drugs, lifestyle and health.</p> <p>Investigate/ observe/ measure the changes to breathing, heart beat and or pulse rates after exercise. Discuss how this would impact on a heavy smoker / on a person with a high fat/ high sugar diet.</p>	<p>Research how local animals are adapted to their environment.</p> <p>Compare how living things adapt to survive in different biomes (hot-camel, cold – polar bear)</p> <p>How have they evolved? How do you think they will need to evolve in the future?</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>Identifying scientific evidence that has been</p>	<p>Test the effect of changing one component at a time in a circuit.</p> <p>Design a burglar alarm.</p> <p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables</p> <p>Using test results to make predictions to set up further comparative and fair tests</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables</p> <p>Using test results to make predictions to set up further comparative and fair tests</p>	<p>Explain time; day/night, month, year, seasons. Investigate how shadows are made. Can we change the shadow by changing a variable?</p> <p>Why do objects look bent in water.</p> <p>Children to use diagrams to explain time through planetary relationships/ movements. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables</p> <p>Recording data and results of increasing</p>

	graphs, bar and line graphs		used to support or refute ideas or arguments			complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
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