

Science Overview

	Lower Key Stage 2		Upper Key Stage 2	
	Year A	Year B	Year A	Year B
Autumn Job Opportunities	Animals including Humans (Year 3) Nutritionist Dietitian Physiologist Radiologist Sound Audiologist Sound Engineer	Light Optometrist Electricity Electrical Engineer Physicist	Properties and changes of Materials Chemical Engineer Biochemist Electricity Robotics Engineer Renewable Energy Engineer	Animals including Humans (Year 6) Psychologist Personal Trainer Forensic Scientist Pathologist Cardiologist Haematologist Living things and their Habitat (Years 5 & 6) Zoologist Marine Biologist Microbiologist Radiographer Farmer Oceanographer
Links with the wider curriculum	<u>Famous Inventions</u> DT - Diet and Nutrition – creating a cereal bar Victorian inventor – Alexander Bell	<u>Roaming all over the World</u> Measuring the length of shadows Data collection for sound of buzzer	<u>Only the Brave</u> Diet and Nutrition Locating Countries	<u>Mayans</u> Different animals in different habitats/locations
Spring Job Opportunities	Forces and Magnets Appliance Engineer Civil Engineer Architect States of Matter Hydrologist Nanoscientist	Living Things and their Habitat Environmental Scientist Veterinary Surgeon Conservationist Plants Landscape Gardener Botanist Horticulturist	Forces Aeronautical Engineer Builder Mechanical Engineer	Animals including Humans (Year 5) Geneticist Evolution and Inheritance Evolutionary Biologist Geneticist Archaeologist Palaeontologist
Links with the wider curriculum	<u>Going to the Extreme</u>	<u>Our Wonderful World</u>	<u>Back to the Future</u>	<u>Vikings</u>

	Make a compass to guide you Changes between the extreme weathers	How plastic impacts the animals Different plants in different areas	DT – creating the lever and pulley Reading scales – Newton meter	Charles Darwin – showcasing evolution and how we have evolved
Summer Job Opportunities	Rocks Palaeontologist Volcanologist Geologist Fossilist	Animals including Humans (Year 4) Dentist Orthodontist	Earth and Space Astrophysicist Astronomer Geologist Meteorologist	Light Light Technician
Links with the wider curriculum	<u>Survival of the Fittest</u> The use of rocks in Stone Age Biography – Mary Anning	<u>Past, Present and Future</u> Organs in canopic jars	<u>To Infinity and Beyond</u> Converting measurements between distance of planets Biography – Tim Peake	<u>The Great Escape</u> Data collection for sound of buzzer Measuring shadows

Prior and Subsequent Coverage Year A

	Prior Knowledge KS1		Subsequent Knowledge KS3
	Year 1	Year 2	
Autumn	<u>Animals Including Humans</u> - 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). <u>Sound</u>	<u>Animals Including Humans</u> - 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. <u>Properties and changes of Materials</u> - Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	<u>Sound</u> - Waves on water as undulations which travel through water with transverse motion; these waves can be reflected, and add or cancel – superposition. - Frequencies of sound waves, measured in Hertz (Hz); echoes, reflection and absorption of sound. - Sound needs a medium to travel, the speed of sound in air, in water, in solids. - Sound produced by vibrations of objects, in loud speakers, detected by their effects on microphone diaphragm and the ear drum; sound waves are longitudinal. - Auditory range of humans and animals. - Pressure waves transferring energy; use for cleaning and physiotherapy by ultra-sound.

	- Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	<u>Properties and changes of Materials</u> - Chemical reactions as the rearrangement of atoms. - Representing chemical reactions using formulae and using equations. - Combustion, thermal decomposition, oxidation and displacement reactions. - Defining acids and alkalis in terms of neutralisation reactions. - The pH scale for measuring acidity/alkalinity; and indicators. <u>Electricity</u> - Electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of charge. - Potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current. - Differences in resistance between conducting and insulating components (quantitative). - Static electricity.
Spring	<u>States of Matter</u> - Distinguish between an object and the material 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.	<u>States of Matter</u> - Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. - Identify and compare the suitability 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.	<u>Forces and Magnets</u> - Magnetic fields by plotting with compass, representation by field lines. - Earth's magnetism, compass and navigation. <u>Forces</u> - Forces as pushes or pulls, arising from the interaction between two objects. - Using force arrows in diagrams, adding forces in one dimension, balanced and unbalanced forces. - Moment as the turning effect of a force. - Forces: associated with deforming objects; stretching and squashing – springs; with rubbing and friction between surfaces, with pushing things out of the way; resistance to motion of air and water. - Forces measured in Newtons, measurements of stretch or compression as force is changed.
Summer	<u>Rocks</u> - Distinguish between an object and the material 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.	<u>Rocks</u> - Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for uses.	<u>Rocks</u> - The composition of the Earth. - The structure of the Earth. - The rock cycle and the formation of igneous, sedimentary and metamorphic rocks. <u>Earth and Space</u> - Gravity force, weight = mass x gravitational field strength (g), on Earth $g=10$ N/kg, different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun (qualitative only).

	- Compare and group together a variety of everyday materials based on their simple physical properties. <u>Earth and Space</u> - Observe changes across the four seasons. - Observe and describe weather associated with the seasons and how day length varies.		- Our Sun as a star, other stars in our galaxy, other galaxies. - The seasons and the Earth's tilt, day length at different times of year, in different hemispheres. - The light year as a unit of astronomical distance.
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Prior and Subsequent Coverage Year B

	Prior Knowledge KS1		Subsequent Knowledge KS3
	Year 1	Year 2	
Autumn	<u>Light</u> - Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. <u>Electricity</u> - Describe the simple physical properties of a variety of everyday materials.		<u>Light</u> - The similarities and differences between light waves and waves in matter. - Light waves travelling through a vacuum; speed of light. - The transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface. - Use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative); the human eye. - Light transferring energy from source to absorber leading to chemical and electrical effects; photo-sensitive material in the retina and in cameras. - Colours and the different frequencies of light, white light and prisms (qualitative only); differential colour effects in absorption and diffuse reflection.
Spring	<u>Living Things and their Habitat</u> - Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. - Describe and compare the structure of a variety of common animals (fish,	<u>Living Things and their Habitat</u> - Identify and name a variety of plants & animals in their habitats. <u>Plants</u> - Observe and describe how seeds and bulbs grow into mature plants.	<u>Plants</u> - Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms. <u>Animals including Humans</u> - Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems,

	amphibians, reptiles, birds and mammals, including pets). <u>Plants</u> - 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.	- Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. <u>Animals including Humans</u> - Notice that animals, including humans, have offspring which grow into adults. <u>Evolution and Inheritance</u> - 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. - Notice that animals, including humans, have offspring which grow into adults.	menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the fetus through the placenta. <u>Evolution and Inheritance</u> - Heredity as the process by which genetic information is transmitted from one generation to the next. - A simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin in the development of the DNA model. - The variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection. - Changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction.
Summer	<u>Animals including Humans</u> - Identify & name a variety of animals that are carnivores, herbivores and omnivores.	<u>Animals including Humans</u> - 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. <u>Living Things and their Habitat</u> - Notice that animals, including humans, have offspring which grow into adults.	<u>Animals including Humans</u> - The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases. - The effects of recreational drugs (including substance misuse) on behaviour, health and life processes. - The structure and functions of the gas exchange system in humans, including adaptations to function. - The mechanism of breathing to move air in and out of the lungs. - The impact of exercise, asthma and smoking on the human gas exchange system. <u>Living Things and their Habitat</u> - Differences between species. - Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta.

			- Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms.
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What the children need to know, before the 'neat' to know

Science- Substantive Content Autumn Year A

	Year 3 and 4	Year 5 and 6
Substantive Knowledge	<u>Animals including Humans (Y3)</u> • 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 other animals have skeletons and muscles for support, protection, and movement <u>Sound</u> • 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 fainter as the distance from the sound source increases	<u>Properties and changes of Materials</u> • 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 • know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • demonstrate that dissolving, mixing and changes of state are reversible changes • 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 <u>Electricity</u> • 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
Disciplinary Knowledge	<u>Animals including Humans (Y3)</u> • gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions	<u>Properties and changes of Materials</u> • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

	- identifying differences, similarities or changes related to simple scientific ideas and processes - using straightforward scientific evidence to answer questions or to support their findings. Sound - asking relevant questions and using different types of scientific enquiries to answer them - setting up simple practical enquiries, comparative and fair tests - making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions - using straightforward scientific evidence to answer questions or to support their findings.	- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. - recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. - using test results to make predictions to set up further comparative and fair tests. Electricity - planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. - recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. - using test results to make predictions to set up further comparative and fair tests. 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.
Outcome	Animals including Humans (Y3) Using the green screen, present the different bones and why humans have skeletons for protection, support, and movement Create a healthy meal – explaining why the foods have been chosen Sound Using the green screen: have an image of an ear and present the information as a report explaining how we hear, what sound is and how it travels	Properties and changes of Materials Using an app of their choice, record a series of investigations and explain what reactions are happening within each of them and why. Children to explain if it is an irreversible or reversible change and how this can be reversed if possible Electricity Design and create a buzzer game – explaining what would increase/decrease the noise of the buzzer or the brightness of the bulb

Science- Substantive Content Spring Year A

	Year 3 and 4	Year 5 and 6
Substantive Knowledge	Forces and Magnets - compare how things move on different surfaces - notice that some forces need contact between 2 objects, but magnetic forces can act at a distance	Forces explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object

	• 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 2 poles • predict whether 2 magnets will attract or repel each other, depending on which poles are facing <u>States of Matter</u> • 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	• identify the effects of air resistance, water resistance and friction, that act between moving surfaces • recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect
Disciplinary Knowledge	<u>Forces and Magnets</u> • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative, and fair tests • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings. <u>States of Matter</u> • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative, and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	<u>Forces</u> • 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 • identifying scientific evidence that has been used to support or refute ideas or arguments.

	• recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes	
Outcome	<u>Forces and Magnets</u> Build a compass to use to direct them and explain how the magnetised pin works <u>States of Matter</u> Create a sandwich bag water cycle and annotate on the bag what is happening and why	<u>Forces</u> Design and create a lever and pulley, explaining how to reduce and increase resistance

Science- Substantive Content Summer Year A

	Year 3 and 4	Year 5 and 6
Substantive Knowledge	<u>Rocks</u> • 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	<u>Earth and Space</u> • 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 the apparent movement of the sun across the sky
Disciplinary Knowledge	<u>Rocks</u> • asking relevant questions and using different types of scientific enquiries to answer them • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions	<u>Earth and Space</u> • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • 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 • identifying scientific evidence that has been used to support or refute ideas or arguments.

	• recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • using straightforward scientific evidence to answer questions or to support their findings.	
Outcome	<u>Rocks</u> Create a classification key on Purple Mash to help them classify the different rocks	<u>Earth and Space</u> Create a model solar system to explain/describe using key facts Organise/re-order the planets based on key facts Create an animation/explanation that explains how day and night are caused and link to seasons and lines of latitude/longitude learnt in geography

Science - Substantive content Autumn Year B

	Year 3 and 4	Year 5 and 6
Substantive Knowledge	<u>Light</u> • 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 an opaque object • find patterns in the way that the size of shadows change <u>Electricity</u> • 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	<u>Animals including Humans (Y6)</u> • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • 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 <u>Living Things and their Habitat (Y5&6)</u> • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction in some plants and animals • 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

Disciplinary Knowledge	<u>Light</u> • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative, and fair tests • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using straightforward scientific evidence to answer questions or to support their findings. <u>Electricity</u> • setting up simple practical enquiries, comparative, and fair tests • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings.	<u>Animals including Humans (Y6)</u> • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • using test results to make predictions to set up further comparative and fair tests. • 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 <u>Living Things and their Habitats (Y5&6)</u> • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • 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 • identifying scientific evidence that has been used to support or refute ideas or arguments.
Outcome	<u>Light</u> Create an e-book explaining what they have found out about light, shadows, materials – including how we see, that light travels in straight lines and how shadows are formed and how they change size/shape dependent on the light source and its position <u>Electricity</u> Use a data logger to test the volume of a buzzer under different materials. Which would insulate the sound the most?	<u>Animals including Humans (Y6)</u> Green screen to present the circulatory system – explaining the main parts of the human circulatory system, the functions of the heart, blood vessels and blood and also why the body needs nutrients and water and how they are transported around the body <u>Living Things and their Habitats (Y5&6)</u> Website/e-book to present life cycles and classify animals/plants linking to the habitat studying in Geography to give it a real purpose

Science - Substantive content Spring Year B

	Year 3 and 4	Year 5 and 6
Substantive Knowledge	<u>Living Things and their Habitats</u> • 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 <u>Plants</u> • 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 life cycle of flowering plants, including pollination, seed formation and seed dispersal	<u>Animals including Humans (Y5)</u> • describe the changes as humans develop to old age <u>Evolution and Inheritance</u> • 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
Disciplinary Knowledge	<u>Living Things and their Habitats</u> • gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes <u>Plants</u> • setting up simple practical enquiries, comparative, and fair tests • gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	<u>Animals including Humans (Y5)</u> • identifying scientific evidence that has been used to support or refute ideas or arguments. <u>Evolution & Inheritance</u> • 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. • identifying scientific evidence that has been used to support or refute ideas or arguments.

	• using straightforward scientific evidence to answer questions or to support their findings.	
Outcome	<u>Living Things and their Habitats</u> Create a classification key on Purple Mash to classify a variety of living things <u>Plants</u> Dissect a plant and present to other audiences what the function of the different parts are	<u>Evolution & Inheritance</u> Double page spread/webpage to display the evolution of humans, making a prediction of what might happen next, and why some species have become extinct

Science - Substantive content Summer Year B

	Year 3 and 4	Year 5 and 6
Substantive Knowledge	<u>Animals including Humans (Y4)</u> • 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	<u>Light</u> • 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 explain why shadows have the same shape as the objects that cast them
Disciplinary Knowledge	<u>Animals including Humans (Y4)</u> • gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using straightforward scientific evidence to answer questions or to support their findings.	<u>Light</u> • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • using test results to make predictions to set up further comparative and fair tests. • 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.
Outcome	<u>Animals including Humans (Y4)</u>	<u>Light</u>

	Create a set of teeth using clay and add in functions for the different teeth using cocktail sticks and paper. Compare this model with animal teeth and how they differ between different examples of predators, prey and producers	Stop motion animation of how we see and how shadows are formed
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