Science Overview 2022-2023

Our KS1 children are on Cycle B

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Biology ●Talk about what they see, using wide vocabulary. ●Understand the key features of the life cycle of a plant and animal. (Caterpillar) ●Begin to understand the need to respect and care for the natural environment and all living things. ●Describe what they see, hear and feel whilst outside.	Biology Physics ●Talk about what they see, using wide vocabulary. ●Understand the key features of the life cycle of a plant and animal. (Pumpkin) ●Understand the effect of changing seasons on the natural world around them. (Autumn trees)	Biology ●Talk about what they see, using wide vocabulary. ●Understand the key features of the life cycle of a plant and animal. (Penguin) ●Describe what they see, hear and feel whilst outside.	Biology Chemistry ●Begin to understand the need to respect and care for the natural environment and all living things. (Spring walk) ●Understand the key features of the life cycle of a plant and animal. (Frog and bean life cycle) ●Talk about changes (freezing and melting)	Biology Physics ●Describe what they see, hear and feel whilst outside. ●Understand the effect of changing seasons on the natural world around them. (changing weather)	Biology ●Talk about what they see, using wide vocabulary. ●Understand the key features of the life cycle of a plant and animal. (growing topic) ●Begin to understand the need to respect and care for the natural environment and all living things. ●Describe what they see, hear and feel whilst outside.
KS1 Cycle A	Biology Animals including Humans ●Notice that animals including humans have	Biology Animals including Humans ●Find out about and describe the basic	Biology Living things and their Habitats ●Compare the differences between	Biology Plants	Chemistry Use of Everyday Materials ●Identify and compare the suitability of a variety of everyday materials	Biology Animals including Humans: Staying Healthy

	offspring that grow into adults. ●Find out about and describe the basic needs of animals including humans for survival. ●Describe how animals obtain their food from plants and other animals using the idea of a simple food chain	needs of animals including humans for survival. ●Notice that animals including humans have offspring that grow into adults. ●To ask questions to help them recognise growth in animals and humans.	things that are living, dead and 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 animals and plants. ●Identify and name a variety of plants and animals in their habitats including micro-habitats.	●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.	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.	●Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.
KS1 Cycle B	Biology Animals including Humans ●Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Physics Seasonal Change ●Observe changes across the four seasons. ●Observe and describe weather associated with the seasons and how day length varies.	Chemistry Materials ●Identify and name a variety of materials, including wood, plastic, glass, metal, water, and fabric ●Describe the physical properties of a variety of materials ●Distinguish between an object and the material from which it is made ●Compare and group together a variety of everyday materials on	Biology Animals including Humans ●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, amphibians, reptiles, birds and mammals, including pets). ●Identify and name a variety of common animals that are	Physics Seasonal Change ●Observe changes across the four seasons. ●Observe and describe weather associated with the seasons and how day length varies.	Biology Plants ●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.

			the basis of their physical properties.	carnivores, herbivores and omnivores.		
Year 3	Chemistry Rocks and Fossils ●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.	Biology Animals including Humans ●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.	Biology Plants ●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	Physics Light and Darkness ●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	Famous Scientists ●Pupil-led unit with 'big questions' answered. ●Teachers to plan and conduct weekly science investigations based on pupil-led inquiry.	Physics Forces and Magnets ●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

Year 4	Physics Sound ●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.	Chemistry States of Matter ●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.	Biology Animals including Humans ●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.	Physics Electricity ●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.	Biology Living things and their Habitats ●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	Biology Living things and their Habitats ●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

Year 5	Biology Living things and their Habitats ●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.	Physics Forces ●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 surfaces ●Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	Physics Earth and Space ●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 ●Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	Biology Animals including Humans ●Describe the changes as humans develop to old age.	Chemistry Properties of Materials ●Compare and group together everyday materials on the basis of their properties. ●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. ●Give reasons, for the particular uses of everyday materials. 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	Chemistry Changes of Materials ●Compare and group together everyday materials on the basis of their properties. ●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. ●Give reasons, for the particular uses of everyday materials. 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

Year 6	Biology Evolution and Inheritance ●Recognise living things produce offspring of the same kind but normally they vary and are not identical to their parents ●Recognise that living things have changed over time ●Identify how animals and plants are adapted to suit their environment in different ways that adaptation may lead to evolution.	Physics Electricity ●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	Biology Living things and their Habitats ●Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. ●Understand the reasons for classifying plants and animals based on specific characteristics ●Give reasons for classifying plants and animals based on specific characteristics	Physics Light ●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 we see things because light travels from light source to our eyes or from light source to object and then our eyes	Physics Light ●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 we see things because light travels from light source to our eyes or from light source to object and then our eyes	Biology Animals including Humans ●Identify and name 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

Working Scientifically

**This happens throughout the year. **

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Ask simple questions recognising that they can be answered in different ways Observe closely, using simple equipment Perform simple tests Identify and classify Use observations and ideas to suggest answers to questions Gather and record data to help in answering questions	Ask simple questions recognising that they can be answered in different ways Observe closely, using simple equipment Perform simple tests Identify and classify Use observations and ideas to suggest answers to questions Gather and record data to help in answering questions	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 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	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 Gathering, recording, classifying and presenting data in 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	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	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 up 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

		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	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • using Identifying differences, similarities or changes related to simple scientific ideas and processes Using straightforward scientific evidence to answer questions or to support their findings	Identifying scientific evidence that has been used to support or refute ideas or arguments	Identifying scientific evidence that has been used to support or refute ideas or arguments