Science – Overview – 2 Year Cycle

	Autumn term	Spring	Summer
FS1 and 2 Cycle A and B	Autumn 1 – Who am I? Who Are You? (All About Me) Autumn 2 – Why Do We Celebrate? (Celebrations)	Spring 1 – Who Lives in a Land Far, Far Away? (Traditional Tales) Spring 2 – Do You Fly, Walk or Swim? (Lifecycles & Animals)	Summer 1 – What's Above Me? What's Below Me? (Growing) Summer 2 – Do You Wish You Were Here? (Travel)
Year 1/ 2 Cycle A	Working Scientifically Physics: Seasonal Changes	Biology: Plants Physics: Seasonal Changes	Physics: Seasonal Changes
Year 1/ 2 Cycle B	Chemistry: Materials	Biology: Animals including humans	Working Scientifically
Year 3 /4 Cycle A	Physics: Light and Dark Physics: Sound	Physics: Electricity	Chemistry: States of Matter
Year 3 /4 Cycle B	Chemistry: Rocks & Soil Physics: Forces & Magnets	Biology: Plants Biology: Living Things & Habitats	Biology: Digestive System (Animals Including Humans) Biology: Skeleton & Muscles (Animals Including Humans)
Year 5/ 6 Cycle A	Chemistry: Reversible and Irreversible Changes Biology: Circulatory System	Biology: All living things and their habitats Biology: Life Cycles Biology: Animal Classification	Physics: Space Biology: Evolution & Inheritance
Year 5/ 6 Cycle B	Physics: Light & Shadows	Physics: Forces	Physics: Electricity

Dalestorth Primary and Nursery School Subject Progression Overview
Subject: Science

Area	FS1	FS2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically	Each year builds on the skills from the previous year.							
Plan	Begin to understand and recognise ways an individual can influence their environment.	Plan to explore and make observations in the surrounding environments and natural world.	Ask simple questions when prompted. Suggest ways of answering a question.	Ask simple questions. Recognise that questions can be answered in different ways. With support, set up a fair test.	Ask relevant questions when prompted. Use different types of scientific enquiry to source an answer to our questions. Set up simple and practical enquiries, comparative and fair tests with some support. Different types of scientific enquiry are: Comparative/fair testing Research Pattern seeking Observe over time Identifying, grouping and classifying.	Ask relevant questions. Use different types of scientific enquiries to answer their questions. Set up simple and practical enquiries (including comparative and fair tests). Different types of scientific enquiry are: Comparative/fair testing Research Pattern seeking Observe over time Identifying, grouping and classifying.	Plan different types of scientific enquiries to answer questions. With prompting, recognise and control variables where necessary. Different types of scientific enquiry are: Comparative/fair testing Research Pattern seeking Observe over time Identifying, grouping and classifying.	Plan different types of scientific enquiries to answer questions. Recognise and control variables where necessary. Different types of scientific enquiry are: Comparative/fair testing Research Pattern seeking Observe over time Identifying, grouping and classifying.
Sentence starters			*We have chosen to….* *We have chosen to….because* *We will collect data ..* *We will need the following equipment …..* *The best way to record this data will be….*		*To carry out my experiment, firstly I will, then, next* *This is a fair test because……* *We will make careful observations to……* *We will use …… to make accurate measurements.*		*In my experiment ,each time we keep the …the same and change the…..* *We have chosen this way to measure because ….* *We will take these measurements because …*	
Do	Explore and make observations of the surrounding environment and natural world. Make changes to the space around them.	Explore and make observations of the surrounding environment and natural world. Take part in adult led experiments (e.g. floating and sinking objects). Demonstrate curiosity and wonder when involved in investigations. Discuss changes that can be observed (e.g. changes in the weather).	Set up and conduct simple test (with support), making relevant observations using simple equipment (e.g. hand lenses, pipettes and egg timers). Identify and classify, with guidance. May classify and measure using non-standard units.	Observe closely, using simple equipment. Perform simple tests. Identify and classify. Begin to use some standard units (e.g. cm, m, g, kg, ml and l) when taking measurements.	Make systematic and careful observations, using simple equipment. Use standard units (e.g. cm, m, kg, g, ml, l and ^{0}C) when taking measurements.	Make systematic and careful observations using a range of equipment, including thermometers and data loggers. Take accurate measurements using standard units, where appropriate.	Select, with prompting, and use appropriate equipment to take readings. Take precise measurements using standard units. Begin to understand the need for repeat readings.	Use a range of scientific equipment to take measurements. Take measurements with increasing accuracy and precision. Take repeat readings when appropriate.
Sentence starters			*I predict that…because……* *I know this is a fair test because….* *We will measure using ……*		*I predict that…because……(recalling previous learning)* *I know this is a fair test because…. is the same and these …..are different.* *We will measure using …… because ….* *We will work systematically by ……*		*I predict that…because……(recalling previous learning)* *I know this is a comparative/ fair test because…. is the same and these …..are different.* *We will measure accurately/with precision using …… because …..* *We will work systematically by ……* *We took repeated readings because…..*	

							The variables that we are keeping the same are …are changing are….	
Record		Begin to draw pictures relating to their context.	Gather and record data.	Record and communicate our findings in a range of ways and begin to use simple scientific language. Group and classify according to a given criteria. Gather and record data to help answer questions, using age-appropriate methods for presenting data in line with Y2 maths (e.g. simple pictograms, tally charts, block diagrams and simple tables.)	With modelling and guidance, gather, record, classify and present data in a variety of ways to help to answer questions. Examples of age-appropriate methods for presenting and recording data in line with Y3 maths include bar charts, pictograms and tables). With prompting, use various ways of recording, grouping and displaying evidence and suggest how findings may be tabulated.	Gather, record, classify and present data in a variety of ways to help to answer questions. Examples of age-appropriate methods for presenting and recording discrete and continuous data in line with Y4 maths include bar charts, time graphs, pictograms, tables and other relevant graphs). Record findings using simple scientific language, drawings and labelled diagrams. Record findings using keys, bar charts, and tables	Take and process repeat readings. Record data and results. Record data using labelled diagrams, keys, tables and charts. Use line graphs to record data.	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar chart, line graphs and scatter graphs.
Sentence starters			*In this diagram/chart/table …*		*My diagram/chart/table …..*		*My key shows….* *My labelled diagram/drawing/table/graphs shows …..*	
Review	With adult support, start to notice when things have changed. Answer 'how and why' questions about their experiences and events.	Notice features of the immediate environment. Recognise similarities and difference Talk about the passage of time in relation to changes. Answer 'how and why' questions about their experiences and events.	Recognise and identify their findings. Use our observations and ideas to conclude our findings and suggest answers to simple questions.	Use our observations and ideas to suggest answers to simple questions. Draw conclusions from fair tests and explain their findings.	With prompting, suggest conclusions from enquiries Suggest how findings could be reported. Suggest possible improvements or further questions to investigate.	Report on findings from enquiries, including oral and written explanations, of results and conclusions Report on findings from enquiries using displays or presentations. Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support their findings. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	Report and present findings from enquiries, including conclusions and, with prompting, suggest causal relationships. *If there is a* **causal relationship** between two things, one thing is responsible for causing the other thing. With support, present findings from enquiries (orally and in writing). Suggest further comparative or fair tests.	Report and present findings from enquiries, including conclusions and causal relationships. Report and presents findings from enquiries in oral and written forms such as displays and other presentation. Report and present findings from enquiries, including explanations of, and degree of, trust in results. Identify scientific evidence that has been used to support or refute ideas or arguments. Use test results to make predictions to set up further comparative and fair tests
Key Vocabulary	Why, How, Explain, Discover, Explore.		Questions, answers, equipment, gather, measure, record, results, sort, group, test, explore, observe, compare, describe, similar/ities, different/ces.	Observe changes over time, notice patterns, secondary sources, identify, classify, data (including previous vocab).	Scientific enquiry changes over time, notice patterns, secondary sources, comparative tests, fair tests, careful, accurate, observations, equipment, gather, measure, record, data, evidence, results, keys, bar charts, table, results, conclusions, predictions,	Enquiry types increase, decrease, identify, classify, order, notice patterns, relationships, appearance, present results, data loggers (including previous vocab).	notice patterns, relationships, independent variable, dependent variable, controlled variable, accuracy, precision, degree of trust, classification keys, scatter graphs, line graphs, causal relationships, support/refute, data loggers (including previous vocab).	Opinion/fact, confidently name scientific enquiry types (including previous vocab).

				support (including previous vocab).			
Sticky Knowledge	Some question words help me find out about what happens to different things and why. When we explore the world around us we can discover new things. It's ok for a test to not work in the way we think it should, we can still learn from it.						
Sentence starters		*When we look carefully we….* *The similarities between …and ….are….* *The differences between …and ….are….* *Our data shows…* *The pattern I noticed is…* *I was surprised that…* *I have found out that…..* *I observed …* *I noticed….* *We can sort/ group our findings by…..* *My prediction was wrong/correct because….*		*When we look carefully we….* *The similarities between …and ….are….* *The differences between …and ….are….* *Our data shows…* *The pattern I noticed is…* *I was surprised that…* *I have found out that…..* *I observed …* *I noticed….* *The changes happened because…..* *We can sort/ group our findings by…..* *My prediction was wrong/correct because….* *In conclusion, we found that….* *To improve our investigation, we….*		*When we look carefully we….* *The similarities between …and ….are….* *The differences between …and ….are….* *Our data shows…* *The pattern I noticed is…* *I was surprised that…* *I have found out that…..* *I observed …* *I noticed….* *The changes happened because…..* *We can sort/ group our findings by…..* *My prediction was wrong/correct because….* *In conclusion, we found that….* *To improve our investigation, we….* *From our results, we can identify/classify/describe…* *The evidence supports the idea…* *I think the data could have been affected by….*	
School Busy Bees Be a friend	Listen to the ideas of our friends.	Listen to each other's ideas/ predictions and respect their opinions.		Use teamwork to carry out an experiment sharing ideas and equipment to effectively come to an end result.		Respect others opinions and have good manners to listen to what they are going to say.	
Be you	Have confidence to share my ideas with my teachers.	Take responsibility for my own work when carrying out experiments.		Have confidence in my own ideas and opinions and share them with my peers celebrating my successes.		Don't worry what others say about your opinions and scientific ideas.	
Be honest	I can ask a question about something I am unsure.	Know that in science we have to follow the rules in order to keep myself and others safe.		Show integrity by following the rules to an experiment and accept when things don't always go your way.		Be fair when working as part of a team knowing when to take responsibility for own actions.	
Be brave	Have a go at a new activity and show resilience if it doesn't work the first-time round.	I can ask for help when I am unsure of something or don't know how to work out the answer.		Try out a new way of working in a scientific concept don't be afraid to make a mistake or ask for help.		Persevere when things don't go to plan, and be willing to have another go.	
Be kind	Help a friend to carry out an activity when they are stuck.	Use kind words when working together with a partner.		Help out a partner when you can to ensure success.		Be careful with your actions so that others can feel like they are succeeding.	
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Biology All living things and their habitats							
Objectives	Children describe similarities and differences in places and living things. They talk about their own immediate environment and how environments might vary from one another. They make observations about animals and plants and explain why some things occur, and talk about changes.		Classify things by living, dead or never lived. Understand how a specific habitat provides for the basic needs of things living there (plants and animals). Match living things to their habitat.		Explain how changes to an environment could endanger living things Use and construct food chains to identify producers, predators and prey Use classification keys to group, identify and name living things		Classify living things into broad groups according to observable characteristics and based on similarities and differences – carnivore, herbivore, omnivore, vertebrate, invertebrate. Amphibian, insect, bird, mammal.

			Name some different sources of food for animals. Explain a simple food chain.				Interpret how living things have been classified Give reasons for classifying plants and animals in a specific way
Key Vocabulary	Animals, Plant, Environment, Habitat, Change	See **Biology- Animals including Humans**		Environment, habitat, organism, classify/classification, characteristics, predators, producers, consumer, prey, vertebrate / invertebrate		Micro-Organism, Vertebrates, Invertebrates, Species, Fungi, Monera, Bacteria, Algae, Carl Linnaeus	
Sticky Knowledge	Not all animals or plants live in the same environment. If a fish lived on dry land it would die. We have lots of different weather in the UK which helps to make the plants grow. We can put seeds in the soil and grow plants, some seeds grow into flowers and others grow into things to eat. Insects are as important as big animals.			There are many different sorts of habitats around the world from forests to grasslands and from mountain slopes to deserts. Animals cannot survive in all habitats – they adapt to survive in the habitat they are in. Plants and animals rely on their environment to give them everything they need. When habitats change, it can endanger the plants and animals that live there. Habitats may change due to natural causes (e.g. earthquakes, storms and droughts) or human-made causes (e.g. deforestation, pollution and urbanisation). A food chain is a series of organisms, each dependent on the next as a source of food. Producers are organisms that produce their own food using photosynthesis e.g. plants and algae. The are at the bottom of the food chain. Predators are animals at the top of the food chain. They eat other smaller animals to survive. There are lots of different ways for classifying and grouping living things and this is often done by their physical features, for example whether they have a backbone or wings. The vast majority of animals on the planet are invertebrates. Invertebrates are insects, spiders, worms, slugs and snails. Vertebrates are mammals, fish, birds, reptiles and amphibians.		The largest vertebrate is the blue whale, which can grow to 25m long and weighs 140,000kg. The smallest vertebrate is thought to be a tiny frog called the Paedophryne Amauensis. It only grows to about 8mm in length. Vertebrates tend to be much more intelligent than invertebrates. Vertebrate animals can be either warm or cold-blooded. A cold-blooded animal cannot maintain a constant body temperature. An invertebrate is an animal that does not have a backbone. 97% of all animal species are invertebrates. There are a wide variety of interesting ocean animals that are invertebrates. These include sponges, corals, jellyfish, anemones, and starfish.	
School Busy Bees Be a friend	Show kindness to the environment	Care for those around them including animals and their habitat.		Do the right thing and show others how to do the same.		Know that we all have to look after the wider world.	
Be you	Show thanks for the world around them.	Be proud for how you look after animals.		Show responsibility for the local area in which we live.		Be proud of the local area.	
Be honest	Follow the rules to protect the environment.	Show genuine interest in the environment around them.		Follow rules in order to show respect for the environment.		Accept consequences for things that have an effect on the environment.	
Be brave	Have courage to explore a new area.	Have courage to show others how to look after something.		Take a chance in exploring new ideas about environment.		Don't give up when things don't go according to plan.	
Be kind	Have respect for the world around them.	Use kind words and help others to do the same.		Help the environment when you can		Respect others for their choices when it comes to opinions about the environment.	
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Biology- Animals including Humans							
Objectives	Children describe similarities and differences in places and living things. They make observations about animals and explain why some things occur, and talk about changes.	Classify a range of animals by amphibian, reptile, mammal, fish and birds. Know and classify animals by what they eat (carnivore, herbivore and omnivore). Sort by living and non-living things. Identify the parts of the human body that can be seen.	Order the basic stages in a life cycle for animals, including humans. Explain why exercise, a balanced diet and good hygiene are important for humans.	Examine the importance of a nutritious, balanced diet Investigate how nutrients, water and oxygen are transported within animals and humans.	Label the skeletal and muscular system of a human. Identify and name the parts of the human digestive system. Explore the functions of the organs in the human digestive system. Identify and know the different types of human teeth.	Recognise the life cycle of different living things e.g. mammal (inc humans), amphibian, insect and bird. Explore the differences between different life cycles – e.g. mammal (inc humans), amphibian, insect and bird. Inspect the process of reproduction in plants	Identify and name the main parts of the human circulatory system Explore the function of the heart, blood vessels and blood Explain the impact of diet, exercise, drugs and lifestyle on health Summarise the ways in which nutrients and water

					Explain the functions of different human teeth.	Discuss the process of reproduction in animals	are transported in animals, including humans
Key Vocabulary	Animal Bird Fish Insect human	Fish, amphibians, reptiles, birds, mammals, carnivore, herbivore, omnivore, tame, wild, nocturnal.		Nutrition, skeleton, muscles, diet, joint, pelvis, cartilage, rib cage, tendon, spine.	Pancreas, oesophagus, intestine, organ, molars, canine, food chain, predators, prey, salivary gland.	Puberty, Gestation, Classification, Precision, Reproduction, Teenager, Obese, Toddler, Embryo	Blood Vessels, Drugs, Atriums, Cardiovascular, Aorta, Capillaries, Pulse, Ventricles, Vein
Sticky Knowledge	There are different types of living things on the earth. Some animals are domesticated and help humans, some animals should always live in the wild. It is important that we care for all living things, domestic and wild	Mammals – Mammals are warm blooded, have fur or hair and give birth to live young. Humans are mammals. Fish - A fish is a scaly skinned creature with a spine that swims in water and breathes using gills. Amphibians - All amphibians begin their life in water with gills and tails. Examples are frogs and newts. Birds - Birds have feathers and wings. They lay eggs and are warm-blooded animals. Reptiles- Reptiles are animals that are cold-blooded. Most lay eggs and their skin is covered with hard, dry scales. Carnivore - A carnivore is a meat-eating animal that gets its food from killing other animals. Omnivore - An omnivore eats plants and meat. Herbivore - A herbivore eats plants. Food chain - When energy passes from one animal to another as they eat plants or one another.		The spine is made up of 33 bones and the smallest bone is found in our ear. Muscles make up 40% of our total body weight and the smallest muscle is found in our ears. When we are born we have about 300 bones in our body by the time we are adults we have 206 because some bones have fused together. When broken our bones will repair themselves. Doctors use casts or splits to make sure they grow back straight. The longest bone in the human body is the thigh bone called the femur. Bone marrow makes up 4% of a human body mass. It produces red blood cells which carry oxygen all around the body.	The oesophagus is the food highway that takes your food from your mouth down into your stomach so that digestion can begin. The stomach is filled with powerful acids that break down the food into smaller pieces. It also lets us know when we are hungry. The liver creates different enzymes to help process food nutrients that are collected in the small intestine. The gallbladder is a storage unit for all of the bile and enzymes created by the liver. It stores them until they are needed for digestion. The main job for the small intestine is to absorb nutrients and minerals from food. In fact, 90% of food absorption takes place here, making it our main digestion location. The outside of our teeth are covered with enamel and the inside have blood vessels and nerves. The front teeth are called incisors, the four sharp teeth are called canines, the teeth at the back are called molars..	The years between 6 and 14 -middle childhood and early adolescence - are a time of important developmental advances that establish children's sense of identity. Many insects have four stages in their life cycle: egg or the unborn stage; larva – young stage; pupa and adult stage. The life cycles of plants and animals have three basic stages including a fertilised egg or seed, immature or juvenile and adult. Some animals go through a process called 'metamorphosis'. This is where the animals change physical form as they mature e.g. a butterfly Sexual reproduction occurs through pollination usually involving wind or insects. Asexual reproduction involves only one parent using bulbs, tubers, runners and cuttings.	The heart is composed of four chambers: the right atrium, the right ventricle, the left atrium and the left ventricle. Your heart will beat about 115,000 times each day. Your heart pumps about 2,000 gallons of blood every day. The circulatory system is made of the heart, lungs and blood vessels. Arteries carry oxygenated blood from the heart to the rest of the body. Veins carry deoxygenated blood from the body to heart. Nutrients, oxygen and carbon dioxide are exchanged via the capillaries.
School Busy Bees Be a friend	Show kindness to the environment	Care for those around them including animals and their habitat.		Do the right thing and show others how to do the same.	Know that we all have to look after the wider world.		
Be you	Show thanks for the world around them.	Be proud for how you look after animals.		Show responsibility for the local area in which we live.	Be proud of the local area.		
Be honest	Follow the rules to protect the environment.	Show genuine interest in the environment around them.		Follow rules in order to show respect for the environment.	Accept consequences for things that have an effect on the environment.		
Be brave	Have courage to explore a new area.	Have courage to show others how to look after something.		Take a chance in exploring new ideas about environment.	Don't give up when things don't go according to plan.		
Be kind	Have respect for the world around them.	Use kind words and help others to do the same.		Help the environment when you can	Respect others for their choices when it comes to opinions about the environment.		
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**

Biology- Plants							
Objectives	Describe the similarities and differences in living things. They talk about their own immediate environment and how environments might vary from one another. They make observations about plants and explain why some things occur, and talk about changes.	Name the roots, trunk, branches and leaves of a tree Name the petals, stem, leaves and root of a plant Name a variety of common wild and garden plants – holly, dandelion, nettle, rose, daisy, buttercup, clover, ivy, bramble, rose, bluebell, sunflower, poppy	Explain how seeds and bulbs grow into plants Explore what plants need in order to grow and stay healthy (water, light and suitable temperature)	Describe the function of different parts of flowing plants and trees. Understand the requirements of plants for life and growth (air, light, water, nutrients from soil and room to grow) which may vary from plant to plant. Explain how water is transported within plants. Explore the plant life cycle, especially the importance of flowers			
Key Vocabulary	Plant, Flower, Tree, Food, Soil, Seed, Roots, Leaves/leaf	leaves, stem, trunk, bulb, root, blossom, evergreen, deciduous, woodland, habitat, oxygen		Roots, stem, nutrients, pollination, seed dispersal, fertiliser, seed formation, stigma, anther, soil.			
Sticky Knowledge	Plants grow in the soil and need food, sunshine and water to grow. Many plants grow from seeds. There are plants that we can eat and plants that we can't eat.	Plants and trees take in water and carbon dioxide and give out oxygen. Trees help purify the air and provide food and shelter for all sorts of creatures. A tree has many roots and these carry food and water from the ground through the trunk and branches to the leaves of the tree. The trunk is the main body of the tree. The trunk is covered with bark, which protects it from damage. Leaves can be of many different shapes. They take in sunlight and use water and food from the roots to make the tree grow. Seeds and bulbs grow into plant if they have the correct conditions, including light and food.		Trees are more than just part of our natural landscape. They provide shelter and food for wildlife. Trees absorb carbon dioxide and produce breathable air. A large tree can consume 100 gallons of water out of the ground in one day. The oldest known living tree is 4,800 years old. Trees are able to communicate and defend themselves against attacking insects. Several centuries ago in Holland, tulips were more valuable than gold. Some plants such as orchids do not need soil to grow-they get all of their nutrients from the air. Broccoli is actually a flower.			
School Busy Bees Be a friend	Care for each other and plants	Use kind words when sharing ideas		Help out peers when they are unsure.		Respect each other opinions	
Be you	Take responsibility for looking after things	Celebrate yourself, plants and living things.		Have confidence in your own ideas		Show thanks for what you have.	
Be honest	Ask for help to grow plants,	Follow the rules to show how things grow.		Ask for help if unsure.		Say sorry when needed and accept differences	
Be brave	Have a go at something new.	Try out different ideas to help plants grow.		Don't give up when things were hard.		Try a different way if at first you don't succeed.	
Be kind	Help someone who is unsure.	Use kind words for those around us.		Show loyalty to those around you.		Respect others ideas.	
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Biology- Evolution and inheritance							
Objectives	Children Describe similarities and differences in places and living things. They talk about their own immediate environment and how environments might vary from one another. They make observations about animals and plants and explain why some things occur, and talk about changes. They describe similarities and differences between themselves and					Create a timeline to indicate stages of growth in humans	Distinguish how the Earth and living things have changed over time Explain how fossils can be used to find out about the past Discuss reproduction and offspring (recognising that offspring normally vary and are not identical to their parents)

	others, and among families, communities and traditions						Explain how animals and plants are adapted to suit their environment Link adaptation over time to evolution Discuss information about evolution and can explain what it is
Key Vocabulary	Change, Family, Community, Grow					Off-Spring, Adaptation, Evolution, Inheritance, Palaeontologist, Charles Darwin, Genes, Chromosomes, Variation	
Sticky Knowledge	Everyone changes as they grow older, in how they look and what they can do. Plants and animals grow and change					Evolution is a scientific theory used by biologists. It explains how living things changed over a long time, and how they have come to be the way they are. Fossils are the preserved remains of ancient animals and plants. Fossils let scientists know how plants and animals used to look millions of years ago. Animals change over time and adapt to the surroundings in which they live. Inheritance refers to the characteristic traits that are genetically passed to offspring from their parents e.g. hair colour, eye colour, height. Darwin observed that there were many forms of finches that have different beak sizes and shapes. Once he considered the food sources of each finch, he noted the reason for these adaptations. Evolutionary questions are still being actively research by biologists.	
School Busy Bees Be a friend	Use kind words about each other.					Include everyone whatever their differences.	
Be you	Celebrate who you are					Follow your dreams	
Be honest	Do not tell lies					Ask if you are unsure.	
Be brave	Have a go					Have resilience	
Be kind	Help out your peers.					Check how people are feeling.	
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Chemistry- Everyday materials							
Objectives	Children describe the similarities and differences in relation to materials. They make observations and talk about them. They develop their own narratives and explanations by connecting ideas and events.	Select the name of the materials an object is made from. Describe the properties of everyday materials. Name a famous person, or a famous place, close to where they live.	Explain why a material might or might not be used for a specific job. Describe how materials can be changed by squashing, bending, twisting and stretching.				
Key Vocabulary	Hot, cold, soft, hard, rough, smooth, wet dry	Materials, suitability, properties, transparent, opaque, stretchy, shiny, dull, rough					
Sticky Knowledge	We use different materials to make things, it is important to choose the right one.	Wood: hard, stiff, strong, opaque, can be carved into any shape, comes from trees Fabric: soft, flexible, hard-wearing, can be stretchy, warm, absorbent Paper: lightweight, flexible, comes from trees					

	We can talk about different materials describing their texture and how they feel. Hard materials are good for building with, soft materials are good for making things like clothes.	Plastic: waterproof, strong, can be made to be flexible or stiff, smooth or rough, manmade •metal: strong, hard, easy to wash Glass: waterproof, transparent, hard, smooth Rubber: hard-wearing, elastic, flexible, strong Bend an object by grabbing both ends of the object and bringing the ends inwards together. Squash an object by pushing both hands together. Twist an object by turning your hands in opposite directions. Stretch an object by pulling your hands slowly and gently apart. Charles Macintosh was a Scottish inventor and chemist who invented waterproof fabrics in 1818. The Mackintosh raincoat was introduced in 1824.					
School Busy Bees Be a friend	Share ideas with kind words.	Listen to what others say.					
Be you	Be humble with praise	Have confidence in own ideas					
Be honest	Follow the rules.	Use fairness with testing materials					
Be brave	Try something new.	Persevere when things go wrong					
Be kind	Respect others ideas.	Respect opinions of others.					
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Chemistry- Rocks							
Objectives	Children describe the similarities and differences in relation to materials. They make observations and talk about them. They develop their own narratives and explanations by connecting ideas and events.			Compare and group rocks based on their appearance and physical properties, giving reasons (limestone, chalk, granite, marble, basalt, sandstone, coal etc). Experiment how soil is made and how fossils are formed. Explain the difference between sedimentary, metamorphic and igneous rock.			
Key Vocabulary	Hot, cold, soft, hard, rough, smooth, wet dry			Fossil, soil, crystal, sedimentary, igneous, metamorphic, organic matter, magma, permeable/impermeable			
Sticky Knowledge	Rocks come in different colours and textures. Some rocks are very hard to break, some, like chalk break easiliy			There are three types of naturally occurring rock: igneous (e.g. granite), sedimentary (e.g. chalk) and metamorphic (e.g. marble) Sediment deposited over time, often as layers at the bottom of lakes and oceans, forms sedimentary rocks. Extreme pressure and heat over time forms metamorphic rocks. Examples are marble and slate. When magma cools and solidifies it forms igneous rock. Examples are granite and pumice. Soil is the uppermost layer of the Earth. It is a mixture of minerals, air, water and organic matter. Fossils form when dead organisms are covered with sediment which may fill the mould left by the organism. Over many years this turns to rock.		
School Busy Bees Be a friend	Share ideas with kind words.			Include everyone in investigations			
Be you	Be humble with praise			Be responsible for outcomes			
Be honest	Follow the rules.			Follow the rules			
Be brave	Try something new.			Have courage to make a change			

Be kind	Respect others ideas.			Help people out if they are unsure.			
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Chemistry- States of Matter							
Objectives	Children describe the similarities and differences in relation to materials. They make observations and talk about them. They develop their own narratives and explanations by connecting ideas and events.				Explore temperature at which materials change state (i.e. water becomes a gas at 100 degrees and solid at 0 but liquid in between) Explore how some materials can change state (water, chocolate, cornflour, jelly, butter) Group materials based on their state of matter (solid, liquid, gas) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.		
Key Vocabulary	Ice, water ,gas, air, bubble, hot cold frozen			Freeze, solid, Celsius, evaporation, condensation, gas, oxygen, liquid, temperature, volume			
Sticky Knowledge	Ice is frozen water Every snowflake is different Bubbles have air inside them.			Materials have three states - gas, liquid and solid. Water becomes a gas called water vapour at 100 degrees Celsius (212 degrees Fahrenheit) Water becomes a solid called ice at 0 degrees Celsius (32 degrees Fahrenheit) Gases are all around us in our atmosphere. Our atmosphere is made up of 78% Nitrogren, 21% Oxygen and many other trace gases such as Argon, Carbon Dioxide and Helium. Liquids, solids and gases are made up of molecules – these are like tiny building blocks that cannot be seen by the naked eye. Gas molecules are separated and move freely, liquid molecules are closer together but can move and solid molecules are tightly packed together and cannot move.		
School Busy Bees Be a friend	Listen to others ideas.			Include everyone in investigations			
Be you	Be proud of your ideas.			Be responsible for outcomes			
Be honest	Follow the rules			Follow the rules			
Be brave	Ask for help if unsure			Have courage to make a change			
Be kind	Help a friend.			Help people out if they are unsure.			
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Chemistry- Properties and changes in materials							
Objectives	Children describe the similarities and differences in relation to materials. They make observations and talk about them. They develop their own narratives and explanations by					Compare and group materials – Cloth, metals, wood, food based, liquids including ice based on their properties (e.g. hardness,	

	connecting ideas and events. They explain why some things occur and talk about changes					solubility, transparency, conductivity, [electrical & thermal], and response to magnets Explain how a material – salt, sugar, flour, coffee, tea, dissolves to form a solution Show how to recover a substance from a solution Demonstrate how some materials – sugar, salt, soil, can be separated (e.g. through filtering, sieving and evaporating) Demonstrate that some changes are reversible and some are not – burning-irreversible, Dissolving reversible. Explain how some changes result in the formation of a new material and that this is usually irreversible – cooked egg, bicarbonate soda and vinegar, baking a cake.	
Key Vocabulary	Freeze, melt, solid, liquid, set, runny, gas					Solubility, Conductivity, Transparency, Thermal Evaporation, Dissolve, Thermal, Filtering, Melting, Seperate	
Sticky Knowledge	Liquid water can be frozen to solid ice and heated up to make steam which is a gas					Irreversible changes, like burning, cannot be undone. Reversible changes, like melting and dissolving, can be changed back again. Mixtures can be separated out by methods like filtering and evaporating. A change is called irreversible if it cannot be changed back again. Examples of reversible changes: Melting is when a solid converts into a liquid after heating. An example of melting is turning ice into water. Freezing is when a liquid converts into a solid. Burning and rusting are examples of processes that change materials to form new materials. For burning to take place, there must be three things: fuel, oxygen and high enough temperature. This is called the 'fire triangle'. Rust is produced in a chemical reaction between iron, oxygen (dissolved in water) and is an example of oxidation which leads to corrosion.	
School Busy Bees Be a friend	Listen to others ideas.					Include everyone in the group.	
Be you	Be proud of your ideas.					Take responsibility for actions	
Be honest	Follow the rules					Show fairness when working as a group	
Be brave	Ask for help if unsure					Persevere when things don't go according to plan	
Be kind	Help a friend.					Help others when you can.	
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Physics Electricity							

Objectives	Children describe the similarities and differences in relation to materials. They make observations and talk about them. They develop their own narratives and explanations by connecting ideas and events. They explain why some things occur and talk about changes				Identify and name appliances that require electricity to function (battery and mains powered) Construct a series circuit Identify and name the components in a series circuit (cells, wires, bulbs, switches and buzzers) Predict and test whether a lamp will light within a circuit Describe the function of a switch Explore the difference between a conductor and an insulator; giving examples of each (conductors – metals but not all, i.e. copper, iron and steel. Insulators – plastic, wood, glass and rubber)		Compare and give reasons for why components work and do not work in a circuit – bulb, motor, buzzer Draw circuit diagrams using correct symbols – Cell (Battery) Power supply, Wire, Bulb, Motor, Buzzer, Switch Explain how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer
Key Vocabulary	Electrical, appliances, circuits, technology, electricity, battery, plug, switch, charge Phone, washer, hoover, TV, computer/tablet			Circuit, conductor, battery, cells, switch, socket, appliance, series circuit, insulator.		conductor, insulator, socket, series circuits, cells, volts, generator, turbine, fuses, Thomas Edison	
Sticky Knowledge	We use a range of technology in our everyday life. In our homes, things like washing machines, boilers and televisions use electricity. Other things like our phones and tablets use electricity which is stored in batteries It is very important that we use electrical items safely. We should only use them if an adult knows and has said we are allowed to.			Electricity can be generated by from power stations, wind, the sun, water and even animal poo! Thomas Edison was a very famous inventor who helped us make the most of electricity from bulbs to fuses. He opened the first power plant in 1882. Electricity is a type of energy that can build up in one place to flow to another. A power station is a place where electricity is created and sent to our homes. Electricity travels at the speed of light, which is more than 186,000 miles per hour When an electric charge builds up on the surface of an object it makes static electricity. This is why we sometimes have a small electric shock.		Electricity travels at the speed of light. That's more than 186,000 miles per second! Electricity comes from the power station, the wind, the sun, water and even an animal's poo! Electricity is a type of energy that builds up in one place (static), or flows from one place to another (current electricity). Coal is the biggest source of energy for producing electricity. Coal is burned in furnaces that boil water and create steam. A popular way of generating electricity is through hydropower. This is a process where electricity is made by water which spins turbines attached to generators. A bolt of lightning can measure up to 3,000,000 volts, and lasts less than one second!	
School Busy Bees Be a friend	Include everyone in group work			Use good manners towards peers		Include everyone in the group.	
Be you	Take responsibility			Take responsibility		Take responsibility for actions	
Be honest	Ask for help			Follow the rules		Show fairness when working as a group	
Be brave	Try a new way			Have courage to show when you are wrong		Persevere when things don't go according to plan	
Be kind	Use kind words.			Respect others ideas.		Help others when you can.	
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Physics- Light							
Objectives	Children describe the similarities and differences in relation to materials. They make observations and talk about them. They develop their own narratives and explanations by connecting ideas and events. They			Explain dark is the absence of light Explain that light is needed in order to see and is reflected from a surface			Explore how light travels Know and demonstrate how we see objects Explain why shadows have the same shape as the object that casts them

	explain why some things occur and talk about changes			Demonstrate how a shadow is formed and explain how a shadow changes shape Identify the danger of direct sunlight and describe how to keep protected			Explore how simple optical instruments work e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.
Key Vocabulary	Light, dark, natural, sun, moon day night			Reflection, shadows, light source, opaque, refraction, periscope, nocturnal, orbits, convex, concave.		Light, Shadows, Light Wave, Light Source, Reflection, Refraction, Spectrum, Filters	
Sticky Knowledge	It is usually light in the day time and dark at night time. We can make light using electricity.			Black and dark objects absorb light and heat whilst white or light objects reflect it. Some objects like glass are transparent which means that light can shine through them. Our main source of light on Earth comes from the Sun. A ray of light travels very fast. Darkness is made by blocking light from the sun or some other source of light, which makes shadows. The Sun and other stars, fires, torches and lamps all make their own light and so are examples of sources of light. A mirror is not a source of light, it merely reflects light. Similarly, the Moon is not a source of light because it reflects the light from the Sun. Some animals are nocturnal. They are awake at night and can see very well in the dark. Our eyes aren't designed to see at night.		Light will travel in a completely straight line until it hits an object that will reflect it. Space does not have any light. We can see things in space due to light bouncing off of the objects in space. Light doesn't travel as fast when it has to pass through mediums that are different, such as air, water or glass. The light that we see from the sun actually left the sun ten minutes before we see it. Light can be controlled and produced in so many ways. A camera can control the amount of light that comes into the camera lens. We also use light in televisions, medical systems, copy machines, telescopes and satellites. Light is used by plants to convert the light into energy as their 'food'. The process is called 'photosynthesis' and converts carbon dioxide through the energy of the light.	
School Busy Bees Be a friend				Use good manners towards peers		Include everyone in the group.	
Be you				Take responsibility		Take responsibility for actions	
Be honest				Follow the rules		Show fairness when working as a group	
Be brave				Have courage to show when you are wrong		Persevere when things don't go according to plan	
Be kind				Respect others ideas.		Help others when you can.	
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Physics- Forces							
Objectives	Children describe the similarities and differences in relation to materials. They make observations and talk about them. They develop their own narratives and explanations by connecting ideas and events. They explain why some things occur and talk about changes			Describe how objects move on different surfaces Explain how a simple pulley works and use to on to lift an object Describe how some forces require contact and some do not, giving examples Explain how magnets attract and repel Predict whether magnets will attract or repel and give a reason		Explain what gravity is and its impact on our lives Identify and know the effect of air and water resistance Identify and know the effect of friction Explain how levers, pulleys and gears allow a smaller force to have a greater effect	
Key Vocabulary	Ramp, fast slow, steep, magnets			Magnet, magnetic pole, magnetic field, attract / repel, force, friction, resistance, gravity		friction, gravity, air resistance, water resistance, levers, pulleys, gears, parachute, Galileo, Newton	
Sticky Knowledge	We can make things go faster down a ramp by making the ramp steeper. You can make some things move by using magnets			The Earth is a very big magnet. Its North and South poles are highly magnetic. The needle in a compass is a magnet. A compass always points north-south on Earth. A magnet always has north and south poles. Like poles repel, opposite poles attract. Cutting a magnet in half makes two magnets, each with two poles.		Frictional force is any force that is caused due to friction. An example of this might be when you put on the brakes on your bike. Gravity is the pulling force acting between the Earth and a falling object, for example when you drop something. Gravity pulls objects to the ground. Surface resistance is the force on objects moving across a surface, such as an ice-skater skating on ice.	

				Magnets only attract certain types of metals; objects containing iron, nickel or cobalt metals are magnetic. Other materials such as glass, plastic and wood aren't attracted. Gravity is the pulling force acting between the Earth and a falling object, for example when you drop something. Gravity pulls objects to the ground. Any kind of force is really just a push or a pull. Forces change the motion of an object. They will either make it start to move, speed up, slow down or stop		Any kind of force is really just a push or a pull. Air resistance is the force on an object moving through air, such as a plane moving through the sky. Air resistance affects how fast or slowly objects move through the air. Water resistance is the force on objects floating on or moving in water. Magnetic force is an invisible force created by electrons. Magnetic force controls magnetism and electricity.	
School Busy Bees Be a friend	Include everyone in group work			Include everyone in the group.		Respect others ideas	
Be you	Take responsibility			Celebrate others ideas		Take responsible	
Be honest	Ask for help			Carry out a fair test		Show integrity in ideas	
Be brave	Try a new way			Have courage to try something new.		Take a risk	
Be kind	Use kind words.			Help someone who is struggling.		Use words to show action and kindness	
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Physics – Earth and Space							
Objectives	Children describe the similarities and differences in relation to places and objects. They make observations and talk about them. They develop their own narratives and explanations by connecting ideas and events. They explain why some things occur and talk about changes					Explain the movement of the Earth and planets in our solar system relative to the Sun – Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, (Pluto as a dwarf planet) Explain the movement of the Moon relative to the Earth Demonstrate how night and day are created Describe the Sun, Earth and Moon (using the term spherical)	
Key Vocabulary	Planet ,earth, star, sun moon, (Name of some planets)					Orbit, Solar System, Rotation, Spherical, Stars, The Sun, Galaxy, Asteroid, Comet	
Sticky Knowledge	We live on the planet earth The earth consists of land and water. There are 8 planets in the solar system					The universe consists of lots of different galaxies which are vast collections of stars. Our galaxy is called the 'Milky Way'. The sun is 109 times wider than the Earth. Earth started is existence approximately 4.54 billion years ago as a heated ball of Oxygen and Silica. The Earth rotates on its axis once every 24 hours. Because of this, the sun shines on different parts of the Earth at different times of day, creating day and night. There are 8 planets in our Solar System: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.	
School Busy Bees Be a friend	Listen to others ideas					Respect others ideas	
Be you	Show thanks					Take responsible	
Be honest	Follow the rules					Show integrity in ideas	
Be brave	Try something new					Take a risk	
Be kind	Help someone.					Use words to show action and kindness	
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Physics- Sound							

Objectives	Children describe the similarities and differences in relation to materials. They make observations and talk about them. They develop their own narratives and explanations by connecting ideas and events. They explain why some things occur and talk about changes				Explore how sound is made, associating with vibrating Explain how sound travels from a source to our ears Describe the correlation between pitch and the object producing a sound Describe the correlation between the volume of a sound and the strength of the vibrations that produced it Explore what happens to a sound as it travels away from its source		
Key Vocabulary	Loud, quiet, high, low, long short.			vibrating, pitch, volume, Insulation (sound proofing), outer, middle and inner ear, cochlea, wave, amplitude			
Sticky Knowledge	Different objects make a different sound. Sometimes you can identify what is making the sound simply by listening carefully			Sound is measured in decibels named in honour of Alexander Graham Bell, who is credited with the invention of the telephone. Sound travels with a speed of 767 miles per hour but it cannot travel through a vacuum and travels slower than light and can't be heard in space Sound comes from vibrations. These vibrations create sound waves which move through mediums such as air and water before reaching our ears. Our ear drums vibrate in a similar way to the original source of the vibration, allowing us to hear many different sounds. When traveling through water, sound moves four times faster than when it travels through air. Sound is used by many animals to detect danger, warning them of possible attacks before they happen		
School Busy Bees Be a friend	Take care of each other			Help a peer complete an experiment			
Be you	Be proud of your ideas			Don't worry if things go wrong.			
Be honest	Share with your friends			Follow the rules			
Be brave	Don't give up			Have courage to answer questions			
Be kind	Use kind words.			Respect the ideas of others.			
Area	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Physics- Seasonal Changes							
Objectives	Children describe similarities and differences in. They make observations and talk about them. They explain why some things occur and talk about changes	Name the seasons and know about the type of weather in each season					
Key Vocabulary	Weather, hot, cold, Autumn, Spring, Summer, Winter Rain, snow, sunshine, wind fog.	Autumn, Spring, Summer, Winter, Fall, weather, temperature, thermometer, weather symbol, deciduous, evergreen, coniferous					
Sticky Knowledge	Summer is usually hot and winter is usually cold Nearly all plants grow the most in Spring and Summer when it is warmer and there is more light. It is darker in winter.	In the UK we have four seasons: spring, summer, autumn and winter. Summer is the hottest season and winter the coldest. Spring starts when the day and night are the same length (usually 21st March. However, many say that Spring starts on March 1st).					

	The leaves on many trees change colour and fall off in Autumn	In summer the longest day of the year is around June 21st and in winter the shortest day of the year is usually December 21st. When we have our summer it is winter in the southern hemisphere. When we have our winter Australia has its summer. In the USA and many other countries the season 'Autumn' is known as the 'Fall'. This is because so many leaves fall from the trees in Autumn. Seasons change throughout the year because of the way the Earth travels around the Sun.		
School Busy Bees Be a friend	Take care of each other	Help other people in the group.		
Be you	Be proud of your ideas	Take responsibility for ideas		
Be honest	Share with your friends	Follow the rules		
Be brave	Don't give up	Try a new idea		
Be kind	Use kind words.	Respect others ideas.		

Talk and write like a Scientist							
Skill	**FS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Observing & Describing (Remembering)	I see... I notice... It looks like... I can spot... It changes when...	I can describe... I observed... I saw that... It looks different because...	I noticed that... It feels/smells/sounds like... I can tell it's different because... I remember it looked like...	I observed that... I can record what I see... I can describe the changes over time... I noticed a pattern in...	I can describe patterns and changes... I can identify the features of... I recorded that it changed when...	I can measure and record accurately... I used a table to show... I noticed the results were...	I can explain what I observed and why it matters... I can summarise the data trends... I noticed a correlation between...
Questioning & Predicting (Understanding)	I wonder why... What will happen if...? Why does it do that? What might happen next?	I think this will happen because... I wonder if... Could it change if...?	I predict that... because... I think it will... I expect it to...	I can ask scientific questions like... What would happen if we changed...? Why does this affect...?	I can make predictions based on what I know... I think the outcome will be... Based on the pattern, I predict...	I can justify my predictions using evidence... My prediction is based on... I expect this result because...	I can evaluate predictions and suggest improvements... I would improve the prediction by... I can refine my hypothesis because...
Explaining & Clarifying (Applying)	This happened because... It works like this... I think it does that because...	I think it works like this... It changes because of... I can explain why it moves...	I can explain how... This happens when... I can show how it works...	I can use scientific words to explain... I can describe the process of... I can explain the function of...	I can link ideas and explain processes... This connects to... I can explain the cause and effect...	I can explain using scientific models or diagrams... I used a diagram to show... This model helps explain...	I can clarify complex ideas using evidence and examples... I can explain the concept using data... I used examples to support my explanation...
Comparing & Connecting (Analyzing)	This is like... It reminds me of... They are both...	It's similar to... I can spot the difference between... They are alike because...	I can compare... This is different from... I noticed they both...	I can group and classify based on features... I sorted them by... These belong together because...	I can identify patterns and relationships... I noticed a link between... This pattern shows...	I can analyse results and draw conclusions... The results suggest that... I found a trend in...	I can evaluate similarities and differences in data... I compared the outcomes and found...

							The data shows a contrast between…
Justifying & Evaluating (Evaluating)	I think it's good because… I like it because… It worked well because…	I agree/disagree because… I think it's better because… I would change it because…	I think this is better because… I can explain why this works… I prefer this method because…	I can explain why my idea works… I chose this because… I think this is more accurate…	I can evaluate results and suggest reasons… I think the results were affected by… I would improve it by…	I can critique methods and suggest improvements… I would redesign the experiment to… I think the method was limited because…	I can justify conclusions using scientific reasoning… I used evidence to support… My conclusion is based on…
Generalising & Reflecting (Creating)	We all think… I learned that… We found out…	Most people think… I think this means… We discovered that…	I think this means… I can make a new question about… I wonder if…	I can summarise what I found out… I can create a new idea from this… I think this could lead to…	I can reflect on what worked and what didn't… I would change this next time… I learned that…	I can create new questions from my findings… I wonder what would happen if… I can design a new test to explore…	I can propose new investigations based on my learning… I would explore this further by… I can develop a new hypothesis based on…

Oracy Objectives in Science Subject Progression

Foundation Stage	Use simple sentences to describe observations (e.g., "The plant is growing" or "It feels cold"). Listen and respond to others' ideas during investigations. Ask questions about the natural world (e.g., "Why does it rain?"). Use role-play to explore scientific concepts (e.g., pretending to be animals or weather).
Key Stage 1	Retell findings from simple experiments using clear language. Use key scientific vocabulary when describing materials, plants, or animals. Ask and answer questions about what they observe (e.g., "What happened when we added water?"). Participate in group discussions, taking turns and listening actively during science activities.
Lower Key Stage 2	Retell findings from simple experiments using clear language. Use key scientific vocabulary when describing materials, plants, or animals. Ask and answer questions about what they observe (e.g., "What happened when we added water?"). Participate in group discussions, taking turns and listening actively during science activities.
Upper Key Stage 2	Debate scientific ideas using respectful language (e.g., "I agree with... because..."). Justify conclusions with evidence from experiments or research. Use formal language structures to explain cause and effect (e.g., "This happened because..."). Present findings confidently from scientific enquiries using charts, diagrams, or oral presentations.
Cross-Curricular Oracy Skills	**Listening**: Active listening during experiments, videos, and peer presentations. **Speaking**: Clear articulation of predictions, observations, and conclusions. **Reasoning**: Making connections between scientific ideas and explaining reasoning. **Presenting**: Sharing learning through presentations, science fairs, or class displays.