Science Subject Policy

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Policy Monitoring, Evaluation and Review

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1.0	June 2024	B. Haley	Initial policy written

Contents

Together We Make a Positive Difference

ENTHUSIASM	KINDNESS	RESPONSIBILITY	RESILIENCE	COURAGE	CURIOSITY
Offering a knowledge-rich, culturally inclusive, exciting curriculum that breeds enthusiasm for learning.	Giving pupils the steps to succeed, respect others, work collaboratively and become kind, inclusive members of society.	Teaching pupils to become responsible citizens to themselves, their families, the school, the community and the wider world.	Allowing pupils to make mistakes, the opportunity to adapt to change and build resilience to overcome adversity.	Providing the occasion for pupils to push boundaries, challenge their world view and be courageous in their decision making.	Fostering a culture of curious questioning, independent research, self-led learning and discovery through exploration.

Science Intent 

Pupils learn through a range of first- hand, practical experiences.	Pupils respect that humans grow and change in different ways.	Pupils are responsible for their own and others' safety when using scientific equipment.	Pupils are taught that they may draw conclusions that differ from their predictions.	Pupils are expected to use increasingly challenging technical vocabulary accurately.	Pupils use scientific enquiry skills to collect, analyse and present data.
Awe and wonder are fostered through observing natural phenomena.	Pupils work in collaboration to conduct experiments and draw conclusions.	Pupils are empowered to take responsibility for the future of their community and the wider world.	Pupils show patience when observing changes over time and pattern seeking.	Pupils challenge their own results and spot anomalies.	Pupils explore and talk about new ideas, questioning what they notice.
Learning is enriched by trips, visitors and real-life experiences.	Pupils are taught to handle animals and plants with care.	Pupils conduct fair and ethical tests.	Pupils are encouraged to explore errors in their investigations.	Pupils have the opportunity to handle exotic animals.	Pupils research to learn about the work of significant scientists.

Science

Purpose of Study: A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

KS1 pupils should be taught to:

- The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them.
- They should be encouraged to be curious and ask questions about what they notice.
- They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information.
- They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways.

Lower KS2 pupils should be taught:

- The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them.
- They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions.
- They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and

Upper KS2 pupils should be taught:

- The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas.
- They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically.
- At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates.
- They should also begin to recognise that scientific ideas change and develop over time.
- They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time,

• Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.	fair tests and finding things out using secondary sources of information. • They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.	noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. • Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

Progression of Knowledge and Skills							
Elements	**EYFS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Working Scientifically	I can ask simple questions about the world around me. I can begin to use observations and ideas to suggest answers to questions I can begin to record simple data. I can begin to group with support.	I can ask simple questions and recognise that they can be answered in different ways I can observing closely, using simple equipment performing simple tests identifying and classifying using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.	I can ask simple questions and recognise that they can be answered in different ways I can observe closely, using simple equipment I can perform simple tests I can identify and classify I can use my observations and ideas to suggest answers to questions I can gather and record data to help in answering questions.	I can ask relevant questions and use different types of scientific enquiries to answer them I can set up simple practical enquiries, comparative and fair tests I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers I can gather, record, classify and present data in a variety of ways to help in answering questions	I can ask relevant questions and use different types of scientific enquiries to answer them I can set up simple practical enquiries, comparative and fair tests I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including	I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I can use test results to make predictions to set up further comparative and fair tests I can report and present findings from enquiries, including conclusions, causal relationships and

				I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions I can identify differences, similarities or changes related to simple scientific ideas and processes I can use straightforward scientific evidence to answer questions or to support their findings.	thermometers and data loggers I can gather, record, classify and present data in a variety of ways to help in answering questions I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I can use test results to make predictions to set up further comparative and fair tests I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations I can identify scientific	explanations of and degree of trust in results, in oral and written forms such as displays and other presentations I can identify scientific evidence that has been used to support or refute ideas or arguments.

					I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions I can identify differences, similarities or changes related to simple scientific ideas and processes I can use straightforward scientific evidence to answer questions or to support findings.	evidence that has been used to support or refute ideas or arguments.	
Animals Incl Humans		I can identify and name a variety of common animals including, fish,	I can notice that animals, including humans, have offspring which grow into adults	I can identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own	I can describe the simple functions of the basic parts of the digestive	I can describe the changes as humans develop to old age.	I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood

		amphibians, reptiles, birds and mammals I can identify and name a variety of common animals that are carnivores, herbivores and omnivores I can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) I can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air) I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene I know the importance of exercise and nutrition for humans I can recognise reproduction and growth in animals	food; they get nutrition from what they eat I can identify that humans and some other animals have skeletons and muscles for support, protection and movement. I know the importance of nutrition I know the main body parts associated with the skeleton and muscles I know that different parts of the body have special functions	system in humans I can identify the different types of teeth in humans and their simple functions I can construct and interpret a variety of food chains, identifying producers, predators and prey I know the main body parts associated with the digestive system (mouth, tongue, teeth, oesophagus, stomach, small and large intestine) and their functions	I can draw a timeline to indicate stages in the growth and development of humans I know the changes experienced in puberty	I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function I can describe the ways in which nutrients and water are transported within animals, including humans. I know how the circulatory system enables the body to function referring to Y3/4 learning on main body parts and internal organs (skeletal, muscular and digestive system) I know how to keep my body healthy and how my body can be damaged (including how drugs can be harmful to human body)

		I know how to take care of animals in my local environment and to return them after study. I know the names for body parts, including head, neck, arms, elbows, knees, legs, face, ears, eyes, hair, mouth and teeth through songs, games, actions and rhymes.					
Living Things and Their Habitats	I can observe life cycles in action and begin to talk about them e.g Chicks and butterflies.		I can explore and compare the differences between things that are living, dead, and things that have never been alive I can identify that most living things live in habitats to		I can recognise that living things can be grouped in a variety of ways I can explore and use classification keys to help group, identify and name a variety of living	I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird I can describe the life process of reproduction in some plants and animals.	I can 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 I can give reasons for classifying plants and

			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 I can identify and name a variety of plants and animals in their habitats, including microhabitats I can describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. I can compare animals in familiar habitats with		things in their local and wider environment I can recognise that environments can change and that this can sometimes pose dangers to living things. I can identify how a habitat changes throughout the year I can group a wide selection of living things including animals and flowering/non-flowering plants I can put vertebrate animals into groups such as fish, amphibians, reptiles, birds	I can observe life-cycle changes in a variety of living things for example plants in the vegetable garden or flower border and animals in the local environment I know about the work of a naturalist and animal behaviourist such as David Attenborough and Jane Goodall I know different types of reproduction (sexual and asexual in plants and sexual reproduction in animals)	animals based on specific characteristics. I know that broad groupings such as micro-organisms, plants and animals can be subdivided I can classify animals into invertebrates (insects, spiders, snails, worms etc) and vertebrates (fish, amphibians, reptiles, birds and mammals) and explain why they are placed in that group

			animals found in less familiar habitats (on the seashore, in woodland, in the ocean, in the rainforest) I know that all living things have certain characteristics that are essential for keeping them alive and healthy I know what a habitat and micro-habitat are		and mammals and invertebrates into snails, slugs, worms, spiders and insects I know the positive and negative impact of humans on environments (e.g. the positive effects of nature reserves, ecologically planned parks or garden ponds and the negative effects of population and development, litter or deforestation)		
Materials		I can distinguish between an object and the material from which it is made I can identify and name a variety of	I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock,		I can compare and group materials together, according to whether they are solids, liquids or gases	I can compare and group together everyday materials on the basis of their properties, including their hardness,	

		everyday materials, including wood, plastic, glass, metal, water, and rock I can describe the simple physical properties of a variety of everyday materials I can compare and group together a variety of everyday materials on the basis of their simple physical properties I can identify materials that are hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, not bendy,	paper and cardboard for different uses I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching I know that some materials are used for more than one thing (e.g. metal can be used for coins/cans/cars/table legs) or different materials are used for the same thing (e.g. spoons from plastic/wood/metal but not normally glass) I know the properties of materials and why		I can 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) I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. I know that solids hold their shape I know that liquids form a pool not a pile	solubility, transparency, conductivity (electrical and thermal), and response to magnets I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating I can give reasons, based on evidence	

		waterproof, not water proof, absorbent, not absorbent, opaque and transparent I can identify brick, paper, fabrics, elastic and foil	this makes them suitable or unsuitable for particular purposes		I know that gases escape from an unsealed container I can observe water as a solid, a liquid and a gas and identify the changes to water when it is heated or cooled	from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic I can demonstrate that dissolving, mixing and changes of state are reversible changes I can 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	

						I can relate my new learning to magnetism (Y3) and electricity (Y4) I know what a reversible change is (evaporating, filtering, sieving, melting, dissolving) I know that melting and dissolving are different processes I know that some changes are difficult to reverse (burning, rusting, vinegar and bicarbonate of soda) I know that chemists create new materials	

						(e.g. Spencer Silver invented glue for sticky notes, Ruth Benerito invented wrinkle-free cotton) I know that some conductors produce a brighter bulb in a circuit than others and some materials feel hotter than others when a heat source is placed against them	
Plants	I can understand that some places are special to members of my community e.g Allotments.	I can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	I can observe and describe how seeds and bulbs grow into mature plants I can find out and describe how plants need water, light and a suitable	I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers I can explore the requirements of plants for life and growth (air, light, water, nutrients			

	I know what grows in an allotment. I can understand some important processes and changes in the natural world. E.g planting and seeing the growth.	I can identify and describe the basic structure of a variety of common flowering plants, including trees. I know the parts of a flower: leaves, bulb, petals, roots, seeds and stem. I know the parts of a tree: trunk branches, blossom, fruit, leaves, root and bulb.	temperature to grow and stay healthy. I know what plants need for germination, growth and survival I know the process of reproduction and growth in plants I know seeds and bulbs need water to grow but most do not need light I know seeds and bulbs have a store of food inside them	from soil, and room to grow) and how they vary from plant to plant I can investigate the way in which water is transported within plants I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. I know the relationship between structure and function (every part has a job to do) I know the role of root and stem in nutrition and support, leaves for nutrition and flowers for reproduction I know that plants can make their own food (children do not need to know HOW)			

Light				I can recognise that they need light in order to see things and that dark is the absence of light I can notice that light is reflected from surfaces I can recognise that light from the sun can be dangerous and that there are ways to protect their eyes I can recognise that shadows are formed when the light from a light source is blocked by a solid object I can find patterns in the way that the size of shadows change. I know what happens when light reflects off a mirror or other reflective surfaces I know why it is important to protect			I can recognise that light appears to travel in straight lines I can 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 I can 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 I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them I can say how light behaves including light sources, reflection and shadows

				my eyes from bright lights I can look for and measure shadows I know how shadows are formed and what may cause them to change			
Forces and Magnets				I can compare how things move on different surfaces I can notice that some forces need contact between 2 objects, but magnetic forces can act at a distance I can observe how magnets attract or repel each other and attract some materials and not others I can compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet,		I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces I can recognise that some mechanisms including levers,	

				and identify some magnetic materials I can describe magnets as having 2 poles I can predict whether 2 magnets will attract or repel each other, depending on which poles are facing I know that magnetic forces can act without direct contact, unlike most forces where direct force is necessary I can explore the behaviour and everyday uses of different magnets (bar/ring/button/horse hoe)		pulleys and gears allow a smaller force to have a greater effect I know what air resistance is and the effects of it by observing how objects fall I know forces can make things begin to move, get faster or slow down I know the effects of friction on movement and how it slows or stops moving objects I know the effects of levers, pulleys and simple machines on movement	
Electricity					I can identify common		I can associate the brightness of a lamp or the volume of a buzzer with the

					appliances that run on electricity I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, motors, wires, bulbs, switches and buzzers I can 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 I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights		number and voltage of cells used in the circuit I can 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 I can use recognised symbols when representing a simple circuit in a diagram. I can construct a simple series circuit and explore what happens when we try different components (switches/bulbs/buzzers/motors) I know how to represent a simple circuit in a diagram using recognised symbols I can work safely with electricity

					in a simple series circuit I can recognise some common conductors and insulators, and associate metals with being good conductors. I can draw a circuit as a pictorial representation (symbols not needed as Y6)		
Discrete units							
	Sense and seasons	Seasonal changes		Rocks	Sound	Earth and space	Evolution and inheritance
	I can explore the natural world around me. I can describe what I see, hear and feel whilst outside?	I can observe changes across the 4 seasons I can observe and describe weather associated with the seasons and		I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties I can describe in simple terms how fossils are formed when things	I can identify how sounds are made, associating some of them with something vibrating I can recognise that vibrations	I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system I can describe the movement	I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago I can recognise that living things produce offspring of the same kind, but normally

	I can understand the effect of the changing seasons around me.	how day length varies I know it is not safe to look directly at the sun, even wearing dark glasses		that have lived are trapped within rock I can recognise that soils are made from rocks and organic matter. I can identify different kinds of rocks and soils, including those in my local environment	from sounds travel through a medium to the ear I can find patterns between the pitch of a sound and features of the object that produced it I can find patterns between the volume of a sound and the strength of the vibrations that produced it. I can recognise that sounds get fainter as the distance from the sound source increases I know that sound is made through vibration (using	of the Moon relative to the Earth I can describe the Sun, Earth and Moon as approximately spherical bodies I can use the idea of the Earth's rotation to explain day and night, and the apparent movement of the sun across the sky. I can explain day and night I know that the Sun is a star at the centre of our solar system and it has 8 planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune… Pluto	offspring vary and are not identical to their parents I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. I know how living things on earth have changed over time, linking back to my knowledge of fossils in Y3 I know that characteristics are passed from parents to offspring (e.g. different breeds of dogs… what happens when a labrador crosses with a poodle?) I know that variation in offspring over time can make animals more or less able to survive in particular environments (e.g giraffes necks becoming longer or insulating fur on arctic fox)

					musical instruments from around the world) I know how pitch and volume of sounds can be changed in a variety of ways	is a dwarf planet) I know that the moon is a celestial body that orbits a planet (Earth has 1 moon, Jupiter has 4 large ones and numerous smaller ones) I know that it is not safe to look directly at the sun, even when wearing dark glasses I know how the geocentric model of the solar system gave way to the heliocentric model	

Scientist Study						
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Scientist	Charles Mackintosh	John Dunlop	Mary Anning	Thomas Edison	Nicolaus Copernicus	Charles Darwin
Big Idea	Waterproof material	Pneumatic Tyre	Fossils	Electric light bulb	Heliocentric Model	Theory of Evolution by Natural Selection
Time period	1824	1887	Early 1800s	1879	1530	1800s
Nationality	Scottish	Scottish	English	American	Polish	English
The process	In 1824, Charles Macintosh created the first waterproof fabric by sandwiching a layer of rubber between two pieces of cloth. This invention led to the first "mackintosh" raincoat.	In 1887, he tried wrapping a rubber tube filled with air around wheels, creating a smoother and faster ride. Dunlop's invention was soon used on bicycles, making them much easier to ride, and eventually on cars.	Mary found fossils of extinct creatures, like the plesiosaurus and the pterodactyl. Mary's work helped scientists learn more about dinosaurs and the history of life on Earth, even though she taught herself and faced many challenges as a woman in science at that time.	One of his most famous inventions was the electric light bulb, which allowed people to have light indoors without candles or gas lamps. His work helped start the first power stations, bringing electricity to homes and businesses for the first time.	He proposed the heliocentric model. His theory said that the Sun is at the centre of the solar system, and all the planets orbit around it. Before, people believed in the geocentric model, where Earth was thought to be the centre of everything. His theory was a huge shift in thinking and laid the foundation for modern astronomy.	He noticed that species adapted to their environments over time, meaning those best suited to survive in their habitats would pass on their traits to their offspring. Darwin's idea of natural selection explained how species change and evolve over generations.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Who am I? (F1) Seasons (F2)	What can I celebrate? (F1) Materials (F2)	What happened in the end? (F1) Seasons (F2)	People who help us (F1) Plants (F2)	How things grow and change (F1)	Where can I go? (F1)
Year 1		Seasonal changes	Everyday materials	Plants	Animals including humans	Dinosaurs
Year 2	Living things and their habitats		Uses of everyday materials	Uses of everyday materials	Plants	Animals including humans
Year 3	Plants		Rocks Forces and Magnets	Rocks Forces and Magnets	Animals including humans	Light
Year 4	Electricity	Living things and their habitats Animals	States of matter Animals including humans (recap Aut1)	States of matter Animals including humans (recap Aut1)	Sound	Sound
Year 5	Animals including humans	Properties and changing materials	Earth and space Forces	Earth and space Forces	Living things and their habitats	
Year 6	Evolution and inheritance Animals including humans RSE		Light	Light	Electricity	Living things and their habitats

Progression of Vocabulary

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Weather Sun Rain Snow Ice Wind Senses Hear See Feel Taste Smell Seasons Plants Soil Light Sun Water Warmth Seeds Grow Leaves Petals Stems Flower Vegetable	Plants Leaf Stem Roots Deciduous Evergreen Trunk Branch Petal Fish Amphibian Reptiles Birds Mammals Herbivore Carnivore Omnivore Head Hands Mouth Ear Nose Material Plastic Glass Metal Wood Waterproof Rock Opaque Transparent Properties: hard, soft, brittle, flexible, rigid, smooth, rough Summer	Living Dead Never alive Habitat Microhabitat Energy Food chain Predator Prey Woodland Pond Desert Rainforest Ocean Characteristics Movement Breathe Surroundings React Grow Reproduce Waste Eat Energy Alive Suitable Parts Function Seeds Bulbs Water Light Temperature Growth Roots	Petal Flower Stigma Style Ovary Ovule Stem Sepal Filament Anther Pollen Nutrition Growth Bud Blossom Reproduction Bulb Grow Water Healthy Temperature Germination Photosynthesis Carbohydrates Fats Fruit and vegetables Protein Milk and dairy Vitamins Minerals Diet Nutrition Water Muscle Body	Classification Grouping Key Mammals Amphibians Reptiles Birds Fish Teeth Incisors Molars Canines Digestion Nutrition Oesophagus Stomach Intestines Faeces Herbivore Carnivore Omnivore Diet Food Chain Producer Prey Predator Consumer Solid Liquid Gas Evaporation Condensation Freezing Boiling Temperature	Life cycle Mammal Amphibian Insect Bird Reproduction Pollination Germination Seed dispersal Flowering Sepal Stigma Style Ovary Anther Filament Receptacle Growth Development Foetus Baby Childhood Old age Gestation Birth Death Reproduction Materials Properties Hardness Solubility Transparency Conductivity Dissolve Solution	Classify Flaura Fauna Micro-organism Species Reptile Bird Plant Fish Mammal Characteristics Bacteria Microbe Fungi Virus Circulatory system Organ Nutrient Blood vessels Lifestyle Transported Impact Heart Heartbeat Capillary walls Platelets Blood Exercise Drugs Alcohol Diet Legal Illegal Evolve Inherit

		Spring Autumn Winter Seasons Climate Weather Compare Observe Record Thermometer Temperature	Leaves Stem Xylem Phloem Oxygen Carbon dioxide Nutrients Minerals Conditions Survival Air Food Adult Baby Offspring Kitten Calf Puppy Exercise Hygiene Shelter Teeth Mammals Animal Human Material Suitable Properties Everyday Hard Soft Stretchy Stiff Shiny Dull Rough Smooth Bendy Waterproof Absorbent	Skeleton Cranium Ribs Clavicle Ulna Humerous Phalanges Femur Patella Tibia Metatarsals Spine Vertebrae Pelvis Rocks Fossils Soils Bone Igneous Sedimentary Metamorphic Permeable Impermeable Fossilisation Layer Limestone Slate Granite Hard Soft Smooth Grainy Dull Fizz Light Reflect Shadow Mirror Light sources Torch	Reversible Water Cycle Vibrations Travels Soundwaves Pitch Volume Distance Source Ear Ear drum Diagram Symbols Electricity Circuit Appliances Conductors Insulators Cell Wires Bulbs Switch Buzzer	Substance Separate Mixture Solid Liquid Gases Filtering Sieving Evaporating Reversible Irreversible Magnetism Spencer Silver Earth Sun Moon Solar System Sphere Day Night Rotation Orbit Planets Axis Spin Sunrise Sunset Winter Spring Summer Autumn Gravity Air resistance Friction Force Surface Up thrust Levers Pulleys Gears	Benefit Adaptation Inheritance Offspring Environment Gender Gene Natural selection Fossils Light source Reflect Translucent Transparent Travel Opaque Shadow Eye Optic nerve Iris Sclera Retina Lens Cornea Pupil Conduct Insulate PARTS OF CIRCUITS: bulb, wire, cell, battery, switch, buzzer, motor, Series Simple circuit Symbol Voltage Brightness Components Fossil fuels Hydroelectric power Power plant Wind turbines Solar power

			Opaque Transparent Brick Paper Fabrics Glass Metal Plastic Wood Squashing Bending Twisting Stretching Elastic Foil Manmade Natural	Opaque Transparent Translucent Distance Straight line Push Pull Friction Gravity Attract Repel Magnetic Force Magnet North pole South pole Magnetic field Iron Steel Cobalt		Push Pull Galileo Galilei Isaac Newton Newton meter Parachute	

Enrichment

- Zoolab
- Space Centre (Year 5)
- Conkers (Year 1)
- Botanical Gardens
- Sea Life Centre (Year 2)
- David Attenborough Arboretum (Year 1)
- Twycross Zoo (Year 1)
- Bradgate Park (Year 3)
- Abbey Pumping Station (Year 4)

Extra-curricular

- Eco Club
- Gardening club

SEND

All children across Fosse Mead Primary Academy receive quality first teaching. Those children who have been identified as having additional needs may require additional strategies and/or resources to enable them to succeed in their learning. These adaptations and considered at a pupil level and will vary dependent on need.

Adaptive curriculum

For children who do not have an age-appropriate level of literacy, Fosse Mead Primary Academy provide an adaptive curriculum. The aim of this is to ensure they have full access to the curriculum and the learning intended within science as a subject. To achieve this, pupil work or outcomes may be recorded differently to their peers.

These adaptations include but are not limited to:

- Adults scribing pupil voice
- 1:1 or small group support for investigations and experiments
- Providing hands on resources where possible
- To use stories and props as a springboard for discussion
- Scaffolded sheets

Challenge

At Fosse Mead Primary Academy, children are continually challenged to explore their curiosity and develop their skills in Science. For example, students can take ownership of creating and organising their own experiments to investigate a given idea. Children are encouraged to step out of their comfort zone, whether by working collaboratively on investigations or through problem solving tasks that enable children to think critically, test their ideas and learn from trial and error.

Equality, diversity and inclusion

At Fosse Mead Primary Academy, we are dedicated to creating an educational environment in Science where equality, diversity, and inclusion (EDI) are fundamental principles guiding our interactions, teaching, and community engagement. We believe that a diverse and inclusive science program enriches the educational experience and prepares our students for a global society. We integrate EDI principles into our curriculum, ensuring that learning materials reflect the diversity of our community and the wider world. In the first term, we focus on exploring local heritage, laying the foundation for understanding Leicester's rich culture and vibrant city life. Additionally, we choose scientists from all parts of the world and backgrounds, celebrating a variety of cultures, perspectives, and histories, which encourages students to express their identities and appreciate the diversity around them.

Health and safety considerations

Fosse Mead Primary Academy takes the health and safety of all pupils and staff seriously. Teachers will carry out a risk assessment before each activity considering the tools, materials and equipment being used and what support may be needed to carry out the activity safely. Before undertaking practical tasks, pupils should be taught to use tools and equipment correctly in order to ensure safety. Within Science there are no special considerations beyond those already in place.

Assessment and recording

At Fosse Mead Primary Academy, we utilise an assessment tracker grid to effectively assess skills in each Science unit. This grid allows educators to assess students' understanding and mastery of key concepts and skills throughout the unit of work. This systematic approach not only helps teachers identify areas for improvement but also empowers students to take ownership of their learning, encouraging them to reflect on their development as they progress through the year.

Monitoring

At regular intervals throughout the year, the Science Leader will conduct book looks, drop-ins, and discussions to monitor the effectiveness of our Science provision. The responsibility for assessing the standards of children’s work and the quality of Science teaching lies with the subject leader. The Curriculum Leader provides strategic leadership and direction for Science within the school. The Science Leader supports colleagues in their teaching practices and ensures they are informed about current developments and best practices in the subject