Our Science Curriculum

Working Scientifically

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• General sensory observations of animals and plants • Simple descriptions of the world around them • Looking at objects and pictures and discussing what they can see • Asks questions about aspects of their familiar world • Generating a variety of ideas for testing • Simple predictions about what might happen. • Talking about objects and events, • Simple recording through pictures and images.	• Ask simple questions and recognise that they can be answered in different ways. • Use simple equipment to observe closely • Perform simple tests • Identify and classify • Use their observations and ideas to suggest answers to questions • Gather and record data to help in answering questions	• Ask simple questions and recognise that they can be answered in different ways • Use simple equipment too closely, including changes over time. • Perform simple comparative tests • Identify, group and classify • Use their observations and ideas to suggest answers to questions, noticing similarities • Gather and record data to help in answering questions, including from secondary sources of information	• Ask relevant questions and use different types of scientific enquiries to answer them • Set up simple practical enquiries, comparative and fair tests • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Report on findings from enquiries, including oral and written explanations,	• Ask relevant questions and use different types of scientific enquiries to answer them • Set up simple practical enquiries, comparative and fair tests • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Report on findings from enquiries, including oral and written explanations,	• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Use test results to make predictions to set up further comparative and fair tests • Report and present findings from enquiries, including conclusions, causal relationships and explanations of and	• Plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Use test results to make predictions to set up further comparative and fair tests • Report and present findings from enquiries, including conclusions, causal relationships and

			displays or presentations of results and conclusions • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Identify differences, similarities or changes related to simple scientific ideas and processes • Use straightforward scientific evidence to answer questions or to support their findings.	displays or presentations of results and conclusions • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Identify differences, similarities or changes related to simple scientific ideas and processes • Use straightforward scientific evidence to answer questions or to support their findings.	degree of trust in results, in oral and written forms such as displays and other presentations • Identify scientific evidence that has been used to support or refute ideas or arguments	explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • 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 • Describe and evaluate their own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources • Group and classify things and recognise patterns
Vocabulary						
Same **Different**	**Compare** **Evidence** **Observe**	**Bar chart** **Carroll Diagram** **Classify** **Compare** **Conclusion** **Fair test** **Identify**	**Annotate** **Bar chart** **Carroll diagram** **Classification** **Fair test** **Graph** **Key**	**Annotate** **Bar chart** **Carroll diagram** **Classification** **Fair test** **Graph** **Key**	**Compare** **Criteria**	**Quantitative measures, degree of trust**

		Investigate **Observation** **Observe** **Plan** **Predict/prediction** **Property/properties** **Record** **Table** **Tally chart** **Venn diagram**	**Pictogram** **Property/properties** **Scale** **Scatter graph** **Tally chart** **Venn diagram**	**Property/properties** **Scale**		

Biology

Animals including humans

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
• Make observations of animals and explain why some things occur, and talk about changes.	• Identify and classify animals • Gather and record data about a variety of common animals	• Gather and record data to answer simple questions about the basic needs of animals and humans • Perform simple comparative tests about the importance of a healthy lifestyle	• Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables about nutrition in animals and humans • Ask relevant questions and use different types of scientific enquiries to answer them – looking at skeletons and muscles	• Use straightforward scientific evidence to answer questions or to support their findings • Identify differences, similarities or changes related to simple scientific ideas and processes	• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary – investigating the changes over time	• Group and classify things and recognise patterns • 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
• Look at different animals and identify what makes them	• Identify and name a variety of common animals	• Understand that animals, including humans, have	• Identify that animals, including humans, need the right types and	• Describe the simple functions of the basic parts of the digestive system in humans	• Describe the changes as humans develop to old age	• Identify and name the main parts of the human circulatory system, and describe the functions of

the same and different • Think about changes between birth to adulthood	including fish, amphibians, reptiles, birds and mammals • Identify and name a variety of common animals that are carnivores, herbivores and omnivores • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	offspring which grow into adults • Describe the basic needs of animals, including humans, for survival (water, food and air) • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • Identify that humans and some other animals have skeletons and muscles for support, protection and movement	• Identify the different types of teeth in humans and their simple functions		the heart, blood vessels and blood • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
Animal, head, arms, legs, hands, feet, toes, fingers, human, adult, baby	**Animal, fish, amphibian, reptile, bird, mammal, gills, fins, claws, fur, hooves, horns, wings, webbed feet, smell,**	**Offspring, exercise, hygiene, cleanliness, healthy, carbohydrates, fat, protein, fruit, vegetables, dairy, muscles**	**Nutrition, abdomen, antennae, arachnid, biodiversity,**	**Human digestive system, tongue – mixes, moistens, saliva. Teeth – incisors – cutting, slicing Canines – ripping, tearing Molars – chewing, gridning Oesophagus**	**birth, breeding, larva, marsupial, , gestation**	**Aorta, arteries, atrium, capillaries, circulatory system, clinical trial, deoxygenated blood, heart rate, red blood cell, rickets, scurvy, vein, vena cava, ventricle, white blood cells**

	hearing, taste, sight, touch			**Acid, enzymes, small intestine, large intestine,**		

Biology						
Living things and their habitats						
EYFS	**Year One**	**Year Two**	**Year Three**	**Year Four**	**Year Five**	**Year Six**
• Using the local area to explore the local environment – children can comment and ask questions about aspects of their familiar world such as the place where they live or the natural world. • Shows care and concern for living things and the environment.		• Identify, group and classify animals into groups • Gather data and record findings about habitats and present in a graph • Answer questions about findings	•	• Gather, record, classify and present data in a variety of ways to help in answering questions – present data	• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	• Plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary • 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
• Local walks around school and the area observing the natural world around them and its features. • Comment and discuss how they can care for their environment and living things		• Explore and compare the differences between things that are living, dead, and things that have never been alive • Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of		• Recognise that living things can be grouped in a variety of ways • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • Recognise that environments can change and that this can sometimes pose dangers and have an impact on living things	• Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • Describe the life process of reproduction in some plants and animals	• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • Give reasons for classifying plants and animals based on specific characteristics

		animals and plants, and how they depend on each other • Identify and name a variety of plants and animals in their habitats, including micro-habitats • 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				
		Living, alive, non-living, dead, never been alive, life process, food chain, predator, prey		**Vertebrate, invertebrate, deforestation, nature reserves, ecologically planned parks**	**endangered, fertilisation, fertilise, genetic, asexual, reproduce,**	**Animalia. Arthropod, bacteria, monera, protista**

Biology						
Seasonal changes						
EYFS	**Year One**	**Year Two**	**Year Three**	**Year Four**	**Year Five**	**Year Six**
• Observe changes where they live or the natural world. • Observe changes over time	• Use their observations and ideas to suggest answers to questions about the					

	changes over the seasons					
• Seasonal walks around the local area observing the changes in the leaves, trees.	• Observe changes across the four seasons • Observe and describe weather associated with the seasons and how day length varies					
Seasons, autumn, winter, spring, summer, day, night	**Seasons, autumn, winter, spring, summer, day, night, morning, afternoon, evening**					

Biology

Plants

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
• Show care and concern for living things and the environment • Observe changes over time • Develop an understanding of growth • Make observations of plants and explain why some things	• Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • Identify and describe the basic structure of a variety of	• Observe and describe how seeds and bulbs grow into mature plants • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	• Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • Explore the requirements of plants for life and growth (air, light, water, nutrients			

occur, and talk about changes.	common flowering plants, including trees		from soil, and room to grow) and how they vary from plant to plant • Investigate the way in which water is transported within plants • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal			
Plant, tree, leaf, flower, seed, grow	**Plant, wild, common, deciduous, evergreen, blossom, roots, flower, leaf, seed, petals, shoot, stalk, weed,**	**Seed, bulb, water, light, temperature, mature plant, wild, common, deciduous, evergreen, blossom, roots, flower, leaf, seed, petals, shoot, stalk, weed,**	**Fertiliser, flowers pollination, seed formation, seed dispersal, anther, carpel, compound leaf, germinate, leaflet, leaf skeleton**			

Biology

Evolution and Inheritance

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
• How we change from birth • Baby clinic – provisions • How do we care for babies/children						• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago

						• Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
Babies, child, adult, mum, dad, nurse, doctor						**Adaptation, evolution, extinction, inheritance, speciation, genetic**

Chemistry

Materials and states of matter

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
• Know the similarities and differences in relation to materials. • Understanding why we use materials for certain things. • Understanding the characteristics of liquids and solids	• Identify and classify • Use their observations and ideas to suggest answers to questions	• Identify and classify • Use their observations and ideas to suggest answers to questions • Use simple equipment too closely, including changes over time. • Perform simple comparative tests				
• Learn the differences in properties of materials	• Distinguish between an object and the material from	• Identify and compare the suitability of a variety of	•	• Compare and group materials together, according to whether	• Compare and group together everyday materials on the basis of their	•

• Understand why some materials are chosen • Floating and sinking of objects • Waterproof materials	which it is made • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • Describe the simple physical properties of a variety of everyday materials • Compare and group together a variety of everyday materials on the basis of their simple physical properties	everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • Describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching		they are solids, liquids or gases • Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets • Recognise that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • Demonstrate that dissolving, mixing and changes of state are reversible changes • Explain that some changes result in the formation of new materials, and that this kind of change	

					is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda	
Material, soft, hard, smooth, rough, liquid, solid, melt	**Absorb, absorbent, fabric, wood, plastic, glass, metal, liquid, rock, nylon, smooth, rough, hard, melt, thermometer**	**Metal, plastic, glass, brick, rock, paper, cardboard, compare, absorb, absorbent, squashing, bending, twisting, stretching**	**Degrees Celsius, fossils, sedimentary rock, organic matter,**	**Evaporate, condense, condensation,**	**Insoluble, soluble, solubility, transparency, conductive, insulation, separate, filtering, dissolving, reversible changes, quantitative measurements**	

Chemistry

Rocks

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
• Observing the similarities and differences between materials. - Through provision the children access different rocks, observing their properties.	.		• Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • Describe in simple terms how fossils are formed when things that have lived are trapped within rock • Recognise that soils are made from rocks and organic matter			• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago

Smooth Hard			**Sedimentary, organic matter, fossil**			**Inhabited**

Physics

Light

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
• Observe changes over time – looking at the differences between light and dark • Provision in areas allow children to access torches			• Recognise that he/she needs light in order to see things and that dark is the absence of light • Notice that light is reflected from surfaces • Recognise that light from the sun can be dangerous and that there are ways to protect eyes • Recognise that light from the sun can be dangerous and that there are ways to protect eyes • Find patterns in the way that the size of shadows change			• Recognise that light appears to travel in straight lines • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them •
Light, dark, torch			**Reflect, surface, natural light, artificial light, reflection, shadow, absence**			**Voltage, volume, series circuit,**

Physics

Electricity

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
• Looking at the difference between light and dark and how light can be created.		• Identify common appliances that run on mains electricity and battery electricity • To know how to keep safe using electricity • To construct a simple circuit,		• Identify common appliances that run on electricity • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • Recognise some common conductors and insulators, and associate metals with being good conductors		• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • Use recognised symbols when representing a simple circuit in a diagram
		Wire battery bulb buzzer circuit		**Insulator, conductor, switch, cell, wire, bulb, buzzer, electrical circuit**		**Voltage, circuit diagram, series circuit, motor**

Physics

Sound

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
• Explore the different sounds of instruments • Experiment ways in which sound can be changed				• Identify how sounds are made, associating some of them with something vibrating • Recognise that vibrations from sounds travel through a medium to the ear • Find patterns between the pitch of a sound and features of the object that produced it • Find patterns between the volume of a sound and the strength of the vibrations that produced it • Recognise that sounds get fainter as the distance from the sound source increases		
Sound, music, loud, quiet, soft, hard				**Vibrations, increase, decrease, fainter, medium, pitch**		

Physics

Forces and Magnets

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
• Repelling and attraction – magnetic materials and sort			• Compare how things move on different surfaces		• Explain that unsupported objects fall towards the Earth because of the	

			• Notice that some forces need contact between two objects, but magnetic forces can act at a distance • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing		force of gravity acting between the Earth and the falling object • Identify the effects of air resistance, water resistance and friction, that act between moving surfaces • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	
Magnet, magnetic, sort, group			**Poles, attract, repel, magnetic force**		**Gravity, resistance, friction**	

Physics

Earth and Space

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
• Natural word – hot and cold • Moon					• Describe the movement of the Earth, and other	

					planets, relative to the Sun in the solar system • Describe the movement of the Moon relative to the Earth • Describe the Sun, Earth and Moon as approximately spherical bodies • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	
Hot, cold, earth, moon, space					**Solar system, spherical body, spherical bodies, rotation, planets (all names)**	