



## SCIENCE

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## SCIENCE: CORE STUDY FOR YEAR ONE

1. Biology			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Identify and name a variety of common wild and garden plants.</li> <li>Identify and describe the basic structure of a variety of common flowering plants, including trees.</li> <li>Know and use key vocabulary.</li> <li>Identify and name a variety of common animals.</li> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> <li>Describe and compare the structure of a variety of common animals.</li> <li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul>	<ul style="list-style-type: none"> <li>ask simple questions and recognise that they can be answered in different ways</li> <li>observe closely, using simple equipment</li> <li>perform simple tests</li> <li>gather and record data to help in answering questions</li> <li>identify and classify</li> <li>use their observations and ideas to suggest answers to questions</li> </ul>	<p>branches, bulb, common, deciduous, evergreen, flower, flowering, fruit, garden, herb, leaf / leaves, petal, plant, roots, seed, stem, tree, trunk, vegetable, vegetation, weed, wild</p> <p>backbone, carnivores, cold-blooded, environment, farm, gills, herbivore, invertebrate, omnivore, pet, temperature, vertebrate, warm-blooded, wild</p>	<p><b>Plants - Local Area</b> "What other things live near us?"</p> <p><b>Animals, including humans - London/ Transport</b> "How Do We Get Around?"</p> <p><b>Animals, including humans – Caribbean Island</b> "How is The Caribbean different from here?"</p>
Extended skills and vocabulary			

2. Chemistry			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Distinguish between an object and the material from which it is made</li> <li>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock</li> <li>Describe the simple physical properties of a variety of everyday materials</li> <li>Compare and group together a variety of every day materials by their simple physical properties.</li> </ul>	<ul style="list-style-type: none"> <li>ask simple questions and recognise that they can be answered in different ways</li> <li>observe closely, using simple equipment</li> <li>perform simple tests</li> <li>gather and record data to help in answering questions</li> <li>identify and classify</li> <li>use their observations and ideas to suggest answers to questions</li> </ul>	absorbent, bendy, brick, dull, elastic, fabrics, foil, glass, man-made, metal, natural, opaque, plastic, rock, rough, shiny, smooth, soft, stiff, stretchy, transparent, waterproof, wood	<p><b>Everyday Materials – Toys</b> “What are toys made from?”</p>
Extended skills and vocabulary			

3. Physics			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Observe changes across the four seasons.</li> <li>Observe and describe weather associated with the seasons and how day length varies.</li> </ul>	<ul style="list-style-type: none"> <li>ask simple questions and recognise that they can be answered in different ways</li> <li>observe closely, using simple equipment</li> <li>perform simple tests</li> <li>gather and record data to help in answering questions</li> <li>identify and classify</li> <li>use their observations and ideas to suggest answers to questions</li> </ul>	autumn, chilly, cold, conkers, day length, daylight, deciduous, freeze, frost, hibernate, ice, migrate, months, nature, rain, season, slightly, snow, spring, summer, sunny, temperature, warm, weather, winter	<p><b>Seasonal Change - Light and Dark</b> “How do we know it is day and night?”</p>
Extended skills and vocabulary			

4. Experimenting skills			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Observe changes over time</li> <li>Observe changes and patterns</li> </ul>	<ul style="list-style-type: none"> <li>asking simple questions and recognising that they can be answered in different ways</li> <li>observing closely, using simple equipment</li> <li>performing simple tests</li> <li>identifying and classifying</li> </ul>	question, questioning, observe, record, identify, group, classify, sort, predict, diagram, chart, bar chart, table, data	All topics listed above
Extended skills and vocabulary			

5. Recording skills			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Identify and classify</li> <li>Perform simple tests</li> <li>Perform a fair test with adult support</li> </ul>	<ul style="list-style-type: none"> <li>using their observations and ideas to suggest answers to questions</li> <li>gathering and recording data to help in answering questions</li> </ul>	question, questioning, observe, record, identify, group, classify, sort, predict, diagram, chart, bar chart, table, data	All topics listed above
Extended skills and vocabulary			

## SCIENCE: CORE STUDY FOR YEAR TWO

1. Biology			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Observe and describe how seeds and bulbs grow into mature plants</li> <li>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> <li>Notice that animals, including humans, have offspring which grow into adults.</li> <li>Find out about and describe the basic needs of animals (Inc. Humans) for survival.</li> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> <li>Explore and compare the difference between things that are living, dead and things that have never been alive.</li> <li>Identify that most living things live in habitats to which they are suited and describe how different habitats provide the basic needs of different kinds of animals and plants, and how they depend on each other.</li> <li>Identify and name a variety of plants and animals in their habitats, including micro-habitats</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>ask simple questions and recognise that they can be answered in different ways</li> <li>observe closely, using simple equipment</li> <li>perform simple tests</li> <li>gather and record data to help in answering questions</li> <li>identify and classify</li> <li>use their observations and ideas to suggest answers to questions</li> </ul>	<p>branches, bulb, common, crop, deciduous, evergreen, flower, flowering, fruit, garden, herb, leaf / leaves, nutrients, petal, plant, reproduce, roots, seed, stem, tree, trunk, vegetable, vegetation, weed, wild</p> <p>backbone, balanced diet, bar chart, bones, disease, exercise, farm, healthy, hygiene, life cycle, medicine, muscles, offspring, pet, pictogram, skeleton, survive</p> <p>biomes, carnivore, depend, food chain, habitat, herbivore, invertebrate, microhabitat, minibeasts, offspring, omnivore, plant, source, tree, vegetation, vertebrate</p>	<p><b>Plants - Being Healthy</b> “What do we need to be healthy?”</p> <p><b>Animals Including Humans - Famous for more than 5 minutes.</b> “How do germs spread”</p> <p><b>Living things and their habitats – Our world in space</b> “How do we move?”</p> <p><b>Living things and their habitats - Australia</b> “How Did the Kangaroo Get Its Pouch?”</p> <p><b>Animals Including Humans – Turrets and Tunnels</b> “How does a butterfly get its wings?”</p>
Extended skills and vocabulary			

2. Chemistry			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Identify and compare the suitability of a variety of every day materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</li> <li>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<ul style="list-style-type: none"> <li>ask simple questions and recognise that they can be answered in different ways</li> <li>observe closely, using simple equipment</li> <li>perform simple tests</li> <li>gather and record data to help in answering questions</li> <li>identify and classify</li> <li>use their observations and ideas to suggest answers to questions</li> </ul>	absorbent, bendy, brick, dull, elastic, fabrics, foil, glass, man-made, metal, natural, opaque, plastic, process, properties, purpose, recyclable, rock, rough, shiny, smooth, soft, squash, stiff, stretchy, suitable, transparent, twist, unsuitable, waterproof, wood	<b>Everyday materials – Seaside</b> “What is the best material to build a lighthouse with?”
Extended skills and vocabulary			

3. Physics			
Core knowledge	Core skills	Core vocabulary	Taught through
• N/A	• N/A	• N/A	• N/A
Extended skills and vocabulary			

4. Experimenting skills			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Use simple equipment to observe closely including changes over time</li> <li>Use observations and ideas to suggest answers to questions noticing similarities, differences and patterns</li> </ul>	<ul style="list-style-type: none"> <li>ask simple questions and recognise that they can be answered in different ways</li> <li>observe closely, using simple equipment</li> <li>perform simple tests</li> <li>gather and record data to help in answering questions identify and classify</li> <li>use their observations and ideas to suggest answers to questions</li> </ul>	question, questioning, observe, record, identify, group, classify, sort, predict, diagram, chart, bar chart, table, data	All topics listed above
Extended skills and vocabulary			

5. Recording skills			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Identify, group and classify</li> <li>Perform simple comparative tests</li> <li>Gather and record data to help in answering questions including from secondary sources of information</li> </ul>	<ul style="list-style-type: none"> <li>ask simple questions and recognise that they can be answered in different ways</li> <li>observe closely, using simple equipment</li> <li>perform simple tests</li> <li>gather and record data to help in answering questions</li> <li>identify and classify</li> <li>use their observations and ideas to suggest answers to questions</li> </ul>	question, questioning, observe, record, identify, group, classify, sort, predict, diagram, chart, bar chart, table, data	All topics listed above
Extended skills and vocabulary			

## SCIENCE: CORE STUDY FOR YEAR THREE

1. Biology			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>Explore the requirements of plants for life and growth and how they vary from plant to plant</li> <li>Investigate the way in which water is transported within plants</li> <li>Explore the part that flowers play in the lifecycle of flowering plants, including pollination, seed formation and seed dispersal Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.</li> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>	<ul style="list-style-type: none"> <li>ask relevant questions and use different types of scientific enquiries to answer them</li> <li>set up simple practical enquiries, comparative and fair tests</li> <li>make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>use straightforward scientific evidence to answer questions or to support their findings</li> <li>use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> </ul>	<p>absorb, anther, bulb, carbon dioxide, climate zone, deciduous, dispersed, dissect, evergreen, fertilisation, fertiliser, flower, flowering, fruit, function, germination, leaf / leaves, life cycle, mature, nutrients, ovule, petal, plant, pollen, pollination, roots, seed, stem, stigma, structure, temperature, transported, trunk, vegetation, wild</p> <p>backbone, bones, contract, elbow, endoskeleton, exoskeleton, joints, muscles, organs, protect, relax, skeleton, support, tendons, vertebrate</p> <p>balanced diet, diet, disease, energy, healthy, hygiene, nutrients, nutrition, starchy</p>	<p><b>Animals including human - Romans in Britain</b> “What Holds Me Up?”</p> <p><b>Animals including human - France</b> “Healthy Diet”</p> <p><b>Plants – Flowering Plants</b> “Can a sunflower grow in the winter?”</p>
Extended skills and vocabulary			



2. Chemistry			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</li> <li>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</li> <li>Recognise that soils are made from rocks and organic matter.</li> </ul>	<ul style="list-style-type: none"> <li>ask relevant questions and use different types of scientific enquiries to answer them</li> <li>set up simple practical enquiries, comparative and fair tests</li> <li>make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>use straightforward scientific evidence to answer questions or to support their findings</li> <li>use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> </ul>	absorb, bedrock, decaying, grain, igneous, imprint, leaf litter, magma, man-made, metamorphic, mineral, molten, natural, nutrients, palaeontology, permeable, porous, prehistoric, preserve, pressure, properties, rock, sediment, soil, surface, surrounding, volcano, weathered	<p><b>Materials (Rocks) – Volcanoes and Earthquakes</b> “Meet a rock?”</p> <p><b>Materials (Rocks) - Romans in Britain</b> “What makes a good road?”</p>
Extended skills and vocabulary			

3. Physics			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Recognise that they need light in order to see things and that dark is the absence of light</li> <li>Notice that light is reflected from surfaces</li> <li>Recognise that light from the sun can be dangerous and there are ways to protect their eyes</li> <li>Recognise that shadows are formed when the light from a light source is blocked by a solid object. Find patterns in the way that the size of shadows change</li> <li>Compare how things move on different surfaces</li> <li>Notice that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li>Observe how magnets attract or repel each other and attract some materials and not others</li> <li>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</li> <li>Describe magnets as having two poles - Predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>	<ul style="list-style-type: none"> <li>ask relevant questions and use different types of scientific enquiries to answer them</li> <li>set up simple practical enquiries, comparative and fair tests</li> <li>make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>use straightforward scientific evidence to answer questions or to support their findings</li> <li>use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> </ul>	<p>attract, bendy, friction, force, gravity, magnet, magnetic field, metal, motion, non-magnetic, opposite, position, pull, push, repel, resistance, squash, stretchy, surface, twist</p> <p>angle, bright, chemical reactions, dark, dim, electricity, emits, light, mirror, opaque, product, reflects, shadows, source, sunglasses, surface, torches, translucent, transparent</p>	<p><b>Forces and Magnets – Stone, Bronze and Iron Age</b> “Who’s got the strongest magnet?”</p> <p><b>Light – Weird and Wonderful</b> “Was Kipper right to be scare of the monster?”</p>
Extended skills and vocabulary			

4. Experimenting skills			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>• Make systematic and careful observations over time</li> <li>• Ask questions surrounding patterns I have found in data.</li> </ul>	<ul style="list-style-type: none"> <li>• ask relevant questions and use different types of scientific enquiries to answer them</li> <li>• set up simple practical enquiries, comparative and fair tests</li> <li>• make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> </ul>	relevant, questions, predication, plan, observations, record, research, enquiry, comparative, fair, accurate, measurements, thermometer, data logger, classify, keys, diagrams, graphs, charts, tables, conclusion, explanation	All topics listed above
Extended skills and vocabulary			

5. Recording skills			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>• gather, record, classify and present data in a variety of ways</li> <li>• Set up simple practical enquiries, comparative and fair tests</li> <li>• Use secondary sources with adult support to help clarify results seen.</li> </ul>	<ul style="list-style-type: none"> <li>• record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>• gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>• identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>• report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>• use straightforward scientific evidence to answer questions or to support their findings</li> </ul>	relevant, questions, predication, plan, observations, record, research, enquiry, comparative, fair, accurate, measurements, thermometer, data logger, classify, keys, diagrams, graphs, charts, tables, conclusion, explanation	All topics listed above

	<ul style="list-style-type: none"><li>• use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li></ul>		
Extended skills and vocabulary			

## SCIENCE: CORE STUDY FOR YEAR FOUR

1. Biology			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans</li> <li>Identify the different types of teeth in humans and their simple functions</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey.</li> <li>Recognise that living things can be grouped in a variety of ways</li> <li>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>Recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul>	<ul style="list-style-type: none"> <li>ask relevant questions and use different types of scientific enquiries to answer them</li> <li>set up simple practical enquiries, comparative and fair tests</li> <li>make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>use straightforward scientific evidence to answer questions or to support their findings</li> <li>use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> </ul>	<p>biomes, carnivore, classification key, criteria, deciduous, environment, evergreen, excretion, food chain, habitat, herbivore, invertebrate, life processes, microhabitat, minibeasts, nutrition, omnivore, organism, reproduction, respiration, sensitivity, urban, vegetation, vertebrate</p> <p>absorb, canine, carnivore, decay, digestion, enamel, excretion, faeces, herbivore, incisor, ingested, intestines, molar, muscles, nutrition, oesophagus, omnivore, organ, plaque, premolar, process, saliva, stomach</p> <p>canine, carnivore, classification, energy, environment, food chain, food web, habitat, herbivore, incisor, life processes, microhabitat, molar, nutrition, omnivore, organism, predator, prey, primary consumer, producer, secondary consumer, tertiary consumer</p>	<p><b>Animals including Humans – Rivers</b> “What happens if we lose the rainforest?”</p> <p><b>Living things and their habitats – The Amazon</b> “Who lives in a place like this?”</p> <p><b>Animals including Humans – The Industrials Revolution</b> “What happens to your chocolate bar after you’ve eaten it?”</p>
Extended skills and vocabulary			

2. Chemistry			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Compare and group materials together, according to whether they are solids, liquids or gases.</li> <li>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.</li> <li>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>	<ul style="list-style-type: none"> <li>ask relevant questions and use different types of scientific enquiries to answer them</li> <li>set up simple practical enquiries, comparative and fair tests</li> <li>make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>use straightforward scientific evidence to answer questions or to support their findings</li> <li>use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> </ul>	condensation, cooling, evaporation, freezing, freezing point, gas, heating, liquid, melting, melting point, particles, precipitation, process, properties, solid, temperature, vibrations, water cycle, water vapour	<p><b>Materials (States of Matter) – Rivers</b>            “What is the journey of a raindrop?”</p> <p><b>Materials (States of Matter) – Invaders &amp; Settlers</b>            “How cold is freezing?”</p>
Extended skills and vocabulary			

3. Physics			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Identify how sounds are made, associating some of them with something vibrating</li> <li>Recognise that vibrations from sounds travel through a medium to the ear</li> <li>Find patterns between the pitch of a sound and features of the object that produced it</li> <li>Find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>Recognise that sounds get fainter as the distance from the sound source increases.</li> <li>Identify common appliances that run on electricity</li> <li>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>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.</li> <li>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>Recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul>	<ul style="list-style-type: none"> <li>ask relevant questions and use different types of scientific enquiries to answer them</li> <li>set up simple practical enquiries, comparative and fair tests</li> <li>make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>use straightforward scientific evidence to answer questions or to support their findings</li> <li>use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> </ul>	<p>amplitude, decibel, electricity, energy, frequency, medium, pitch, power, sound waves, source, transmit, travel, vibrations, volume</p> <p>appliances, battery, bulb, buzzer, cell, circuit, component, conductor, current, device, electricity, energy, fuel, generate, insulator, mains, motor, power, source, switch, wires</p>	<p><b>Sound – Invaders &amp; Settlers</b> “How did the Celts hear the invaders coming?”</p> <p><b>Electricity – The Industrial Revolution</b> “Can you make a bulb flash?”</p>
Extended skills and vocabulary			

4. Experimenting skills			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>• Make systematic and careful observations over time, looking at similarities and differences.</li> <li>• Ask questions surrounding patterns I have found in data.</li> </ul>	<ul style="list-style-type: none"> <li>• ask relevant questions and use different types of scientific enquiries to answer them</li> <li>• set up simple practical enquiries, comparative and fair tests</li> <li>• make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> </ul>	<p>amplitude, decibel, electricity, energy, frequency, medium, pitch, power, sound waves, source, transmit, travel, vibrations, volume</p> <p>appliances, battery, bulb, buzzer, cell, circuit, component, conductor, current, device, electricity, energy, fuel, generate, insulator, mains, motor, power, source, switch, wires</p>	<p><b>Sound – Invaders &amp; Settlers</b> “How did the Celts hear the invaders coming?”</p> <p><b>Electricity – The Industrial Revolution</b> “Can you make a bulb flash?”</p>
Extended skills and vocabulary			

5. Recording skills			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>• Gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>• Set up simple practical enquiries, comparative and fair tests</li> <li>• Use secondary sources with adult support to help clarify results seen.</li> </ul>	<ul style="list-style-type: none"> <li>• record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>• gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>• identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>• report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>• use straightforward scientific evidence to answer questions or to support their findings</li> </ul>	<p>relevant, questions, predication, plan, observations, record, research, enquiry, comparative, fair, accurate, measurements, thermometer, data logger, classify, keys, diagrams, graphs, charts, tables, conclusion, explanation</p>	<p>All topics listed above</p>



	<ul style="list-style-type: none"><li>• use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li></ul>		
Extended skills and vocabulary			

## SCIENCE: CORE STUDY FOR YEAR FIVE

1. Biology			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Describe the changes as humans develop to old age.</li> </ul>	<ul style="list-style-type: none"> <li>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> </ul>	adolescence, adulthood, development, foetus, genitals, gestation, growth, hormones, independent, infancy, life cycle, life processes, mature, menopause, menstruation, offspring, organ, puberty, rapid, reproduction, toddler, vertebrate,	<b>Animals including humans – The Tudors</b> “Relationship and Sex Education PSHE Jigsaw”
<ul style="list-style-type: none"> <li>Describe the differences in the lifecycles of a mammal, an amphibian, an insect and a bird.</li> <li>Describe the life process of reproduction in some plants and animals.</li> </ul>	<ul style="list-style-type: none"> <li>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>identify scientific evidence that has been used to support or refute ideas or arguments</li> <li>present results in oral and written forms such as displays and other presentations</li> </ul>	anther, bulb, cell, dispersed, dissect, embryo, fertilisation, flower, flowering, function, gamete, germination, life cycle, mature, metamorphosis, ovary, ovule, petal, plant, pollen, pollination, reproduction, seed, stigma, structure	<b>Living things and their habitats – Incredible Earth</b> “Which came first, the chicken or the egg?”
Extended skills and vocabulary			

2. Chemistry			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets -Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution</li> <li>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>Demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>identify scientific evidence that has been used to support or refute ideas or arguments</li> <li>present results in oral and written forms such as displays and other presentations</li> <li>use test results to make predictions to set up further comparative and fair tests</li> </ul>	circuit, condensation, conductor, dissolves, electricity, evaporation, filtering, flexible, gas, insoluble, insulator, irreversible, liquid, magnetic, melting, particles, permeable, process, properties, rate, resistance, reversible, solid, soluble, solution, state, temperature, thermal, transparent, variable, water cycle	<b>Properties and Changes of Materials – Food for Thought Topic</b> “Cinderella’s Dilemma”
Extended skills and vocabulary			

3. Physics			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Describe the movement of the Earth and other planets, relative to the Sun in the solar system</li> <li>Describe the movement of the Moon relative to the Earth.</li> <li>Describe the Sun, Earth and Moon as approximately spherical bodies.</li> <li>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</li> </ul>	<ul style="list-style-type: none"> <li>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>identify scientific evidence that has been used to support or refute ideas or arguments</li> </ul>	asteroid, axis, comet, galaxy, gravity, leap year, meteorite, orbit, planet, shadow, Solar System, sphere, spin, star, time zones, universe	<b>Earth and Space – Space Topic</b> “What shape is my shadow?”
<ul style="list-style-type: none"> <li>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>Identify the effects of air resistance, water resistance and friction that act between moving surfaces</li> <li>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</li> </ul>	<ul style="list-style-type: none"> <li>plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>identify scientific evidence that has been used to support or refute ideas or arguments</li> <li>report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results</li> <li>present results in oral and written forms such as displays and other presentations</li> <li>use test results to make predictions to set up further comparative and fair tests</li> </ul>	attract, friction, force, gear, gravity, lever, motion, opposite, pulley, repel, resistance, spring, streamlined, surface	<b>Forces - Ancient Egypt Topic</b> “How did they build the pyramids without machines?”  <b>Forces - Shakespeare Topic</b> ‘What would life be like without friction?’
Extended skills and vocabulary			

4. Experimenting skills			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Observe over time, asking pertinent questions about similarities and differences.</li> <li>Ask questions surrounding patterns I have found in data as to why something I have observed has happened.</li> </ul>	<ul style="list-style-type: none"> <li>plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> </ul>	predication, plan, variables, observations, record, repeat, identify, comparative, fair, accurate, precise, quantitative, measurements, scientific, diagrams, classification, keys, present, systematic, patterns, interpret, conclusion, explanation, relationships, evidence, refute, validity	All topics listed above
Extended skills and vocabulary			

5. Recording skills			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Classify, group and present data in a series of ways to help in answering questions</li> <li>Take measurements, using a range of scientific equipment, with increasing accuracy and precision.</li> <li>Use secondary sources to help interpret results seen.</li> </ul>	<ul style="list-style-type: none"> <li>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>identify scientific evidence that has been used to support or refute ideas or arguments</li> <li>report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results</li> <li>present results in oral and written forms such as displays and other presentations</li> <li>use test results to make predictions to set up further comparative and fair tests</li> </ul>	variables, observations, record, repeat, identify, comparative, accurate, precise, quantitative, measurements, scientific, diagrams, classification, keys, present, systematic, graphs, (scatter, line, bar), patterns, interpret, conclusion, explanation, relationships, evidence, refute, degree of trust in results, validity	All topics listed above
Extended skills and vocabulary			

## SCIENCE: CORE STUDY FOR YEAR SIX

1. Biology			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>Describe the ways in which nutrients and water are transported within animals including humans.</li> <li>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</li> <li>Give reasons for classifying plants and animals based on specific characteristics</li> <li>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</li> <li>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul>	<ul style="list-style-type: none"> <li>plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>identify scientific evidence that has been used to support or refute ideas or arguments</li> <li>report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results</li> <li>present results in oral and written forms such as displays and other presentations</li> <li>use test results to make predictions to set up further comparative and fair tests</li> </ul>	<p>adaptation, carnivore, characteristics, classification key, criteria, energy, environment, evolution, food chain, habitat, herbivore, invertebrate, microhabitat, microorganism, minibeasts, omnivore, organism, predator, prey, species, vertebrate</p> <p>aorta, arteries, blood vessels, capillaries, carbon dioxide, circulatory system, deoxygenated blood, heart, lungs, nutrients, organ, oxygen, oxygenated, pulse, respiration, vein, vena cava, ventilation, via</p> <p>adaptation, ancestor, biodiversity, biome, breeding, characteristics, environment, evolution, extinct, fossil, generation, inherit, maladaptation, mutation, natural selection, offspring, palaeontology, reproduction, species, survive, theory, variation</p>	<p><b>Living things and their habitats – World War Two</b> “Animal or Plant?”</p> <p><b>Animals including humans – China and Japan</b> “The younger you are the fitter you are...true or false?”</p> <p><b>Evolution and inheritance – St Briavels</b> “Would four legs be better than two?”</p>
Extended skills and vocabulary			

2. Chemistry			
Core knowledge	Core skills	Core vocabulary	Taught through
N/A	N/A	N/A	N/A
Extended skills and vocabulary			

3. Physics			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Recognise that light appears to travel in straight lines</li> <li>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</li> <li>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.</li> <li>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> <li>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>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</li> <li>Use recognised symbols when representing a simple circuit in a diagram</li> </ul>	<ul style="list-style-type: none"> <li>plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>identify scientific evidence that has been used to support or refute ideas or arguments</li> <li>report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results</li> <li>present results in oral and written forms such as displays and other presentations</li> <li>use test results to make predictions to set up further comparative and fair tests</li> </ul>	<p>ammeter, appliances, battery, bulb, buzzer, cell, circuit, component, conductor, current, device, electricity, energy, fuel, generate, insulator, mains, motor, power, resistance, resistor, source, switch, voltage, wires</p> <p>angle, dark, dim, electricity, emits, light, mirror, opaque, reflects, refraction, shadows, source, torches, translucent, transparent</p>	<p><b>Light – Ancient Greece</b> “Can you see around corners?”</p> <p><b>Electricity – St Briavels</b> “Circuits?”</p>
Extended skills and vocabulary			

4. Experimenting skills			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Recognise things change over time, and can ask pertinent questions and suggest reasons for similarities and differences over time</li> <li>Ask questions surrounding patterns I have found in data as to why something I have observed has happened.</li> </ul>	<ul style="list-style-type: none"> <li>plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> </ul>	predication, plan, variables, observations, record, repeat, identify, comparative, fair, accurate, precise, quantitative, measurements, scientific, diagrams, classification, keys, present, systematic, patterns, interpret, conclusion, explanation, relationships, evidence, refute, validity	All topics listed above
Extended skills and vocabulary			

5. Recording skills			
Core knowledge	Core skills	Core vocabulary	Taught through
<ul style="list-style-type: none"> <li>Develop and use keys and other information to classify and describe objects in ways to help answer questions</li> <li>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>Use secondary sources to help interpret results seen</li> </ul>	<ul style="list-style-type: none"> <li>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>identify scientific evidence that has been used to support or refute ideas or arguments</li> <li>report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results</li> <li>present results in oral and written forms such as displays and other presentations</li> <li>use test results to make predictions to set up further comparative and fair tests</li> </ul>	variables, observations, record, repeat, identify, comparative, accurate, precise, quantitative, measurements, scientific, diagrams, classification, keys, present, systematic, graphs, (scatter, line, bar), patterns, interpret, conclusion, explanation, relationships, evidence, refute, degree of trust in results, validity	All topics listed above
Extended skills and vocabulary			