

**Progression of Skills and Knowledge**

**Subject:** Science

<b>SCIENTIFIC ENQUIRY APPROACHES:</b>						
Scientific Enquiry describes the processes and skills pupils should be taught and use, to find out more about the world and how it works. At Brentfield, children learn about the world around them using the following enquiry approaches:						
<b>Pattern Seeking</b> 	<b>Researching</b> 	<b>Fair Testing</b> 	<b>Observing Over Time</b> 	<b>Identifying, Grouping and Classifying</b> 	<b>Problem Solving</b> 	
Identifying patterns and looking for relationships in enquiries where variables are difficult to control.	Using secondary sources of information to answer scientific questions.	Changing one variable to see its effect on another, whilst keeping all others the same.	Observing changes that occur over a period of time ranging from minutes to months.	Making observations to name, sort and organise items.	Applying prior scientific knowledge to find answers to problems.	
<b>SCIENTIFIC SKILLS:</b>						
Children are taught the following skills to carry out scientific enquiry:						
<b>Asking Questions</b> 	<b>Making Predictions</b> 	<b>Setting up Tests</b> 	<b>Observing and Measuring</b> 	<b>Recording Data</b> 	<b>Interpreting and Communicating Results</b> 	<b>Evaluating</b> 
Asking questions that can be answered using a scientific enquiry	Using prior knowledge to suggest what will happen in an enquiry	Deciding on the method and equipment to use to carry out an enquiry	Using senses and measuring equipment to make observations about the enquiry	Using tables, drawings and other means to note observations and measurements	Using information from the data to say what you found out	Reflecting on the success of the enquiry approach and identifying further questions for enquiry

## PROGRESSION IN DISCIPLINARY KNOWLEDGE (WORKING SCIENTIFICALLY)

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><b>ASKING QUESTIONS</b></p> 	<ul style="list-style-type: none"> <li>Know that a question is a phrase or sentence which asks for information</li> <li>Begin to ask simple questions</li> </ul>	<ul style="list-style-type: none"> <li>Know that there are many questions for finding answers</li> <li>Ask questions about the world around us.</li> <li>Begin to answer yes/no questions to aid sorting</li> </ul>	<ul style="list-style-type: none"> <li>Know that questions can be tested to see if they are true.</li> <li>Begin to recognise that questions can be answered in different ways</li> <li>Be able to answer yes/no questions to aid sorting</li> <li>Identify the question to investigate from a scenario or choose a question from a range provided</li> <li>Ask a question about what might happen in the future based on observation</li> <li>Ask a question that is looking for a pattern based on observation</li> </ul>	<ul style="list-style-type: none"> <li>Know that questions can be answered through scientific enquiry</li> <li>Begin to ask some relevant questions and use different types of scientific enquiries to answer them.</li> <li>Begin to ask a range of yes/no questions to aid sorting</li> </ul>	<ul style="list-style-type: none"> <li>Ask a range of relevant scientific questions and use different types of scientific enquiries to answer them.</li> <li>Be able to ask a range of yes/no questions to aid sorting</li> </ul>	<ul style="list-style-type: none"> <li>Begin to select and plan the most appropriate ways to answer science questions using different types of scientific enquiry.</li> <li>Begin to ask a range of yes/no questions to aid sorting and decide which ways of sorting will give useful information</li> </ul>	<ul style="list-style-type: none"> <li>Select and plan the most appropriate ways to answer science questions using different types of scientific enquiry.</li> <li>Be able to ask a range of yes/no questions to aid sorting and decide which ways of sorting will give useful information</li> <li>Ask a range of questions recognising that some can be answered through research and others may not</li> <li>Ask further questions based on results</li> </ul>

<p><b>MAKING PREDICTIONS</b></p> 	<p>Children in the EYFS and KS1 are not expected to make scientific predictions as they do not have the subject knowledge to do this.</p> <p>However, children should be encouraged to think about what might happen. Their responses will be based on experience or may simply be a guess.</p>			<ul style="list-style-type: none"> <li>• Begin to make predictions and give a reason.</li> </ul>	<ul style="list-style-type: none"> <li>• Make predictions drawing on previous experience and knowledge.</li> </ul>	<ul style="list-style-type: none"> <li>• Make and explain predictions.</li> <li>• Begin to use test results to make predictions and set up further comparative and fair tests.</li> </ul>	<ul style="list-style-type: none"> <li>• Make and explain predictions using scientific language and begin to support with scientific evidence.</li> </ul>
<p><b>SETTING UP TESTS</b></p> 	<ul style="list-style-type: none"> <li>• Know that a test is set of tasks undertaken to find something out</li> <li>• Begin to carry simple tests through play.</li> </ul>	<ul style="list-style-type: none"> <li>• Know that there are tests to find answers to questions</li> <li>• Begin to carry out simple tests</li> </ul>	<ul style="list-style-type: none"> <li>• Know that there are different ways to carry out a test using simple equipment</li> <li>• Know how to use simple equipment safely</li> <li>• Carry out simple tests</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to measure tests accurately using a range of equipment</li> <li>• Set up some simple, practical enquiries, comparative and fair tests</li> </ul>	<ul style="list-style-type: none"> <li>• Know that in a fair test, one thing is altered and that thing may change as a result is measured while other conditions are kept the same</li> <li>• Set up practical enquiries, comparative and fair tests.</li> <li>• Recognise when a fair test is necessary and decide how to set it up.</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to accurately use further test measuring devices, including digital and analogue scales, measuring cylinders and beakers</li> <li>• Know how and when to repeat tests and measurements</li> <li>• Set up comparative and fair tests and begin to decide which variables to control.</li> </ul>	<ul style="list-style-type: none"> <li>• Know which testing equipment to choose to carry out a scientific enquiry and explain how to use the equipment accurately</li> <li>• Know how to identify conditions that were imperfectly controlled and explain how these might affect results</li> </ul>
<p><b>OBSERVING AND MEASURING</b></p> 	<ul style="list-style-type: none"> <li>• Know that what is seen to be happening/changes which are seen to be happening can be talked about</li> <li>• Begin to observe closely, using simple equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Know that there are ways to observe things closely</li> <li>• Observe closely, using simple equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Know that observations are made in the world in order to answer questions</li> <li>• Observe closely using</li> </ul>	<ul style="list-style-type: none"> <li>• Know that observations can depend on conditions for scientific enquiry</li> <li>• Begin to make systematic and careful observations</li> </ul>	<ul style="list-style-type: none"> <li>• Know that observations for scientific enquiries are limited by the accuracy of measurements and use of equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Know that observations for scientific enquiry are limited by the accuracy of measurements and the by the extent to which</li> </ul>	<ul style="list-style-type: none"> <li>• Know how and when to repeat observations for scientific enquiries to vary conditions and make improvements.</li> <li>• Take measurements,</li> </ul>

		<ul style="list-style-type: none"> <li>Be able to compare objects based on obvious observable features</li> </ul>	<p>simple equipment.</p> <ul style="list-style-type: none"> <li>Observe changes over time with guidance and begin to notice patterns and relationships.</li> <li>Begin to progress from non-standard units to mm cm ml l etc.</li> <li>Use simple measurements and equipment (hand lenses, egg timers etc.)</li> </ul>	<p>and where appropriate, take accurate measurements using standard units using a range of equipment- e.g. thermometers, data loggers.</p> <ul style="list-style-type: none"> <li>Learn to use some new equipment- e.g. data loggers.</li> <li>Begin to measure accurately using standard units including time in mins and secs.</li> <li>Begin to identify differences, similarities, or changes related to simple scientific ideas or processes.</li> </ul>	<ul style="list-style-type: none"> <li>Make some decisions about which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative and fair tests, finding things out.</li> <li>Make systematic and careful observations and where appropriate, take accurate measurements using standard units using a range of equipment- e.g. thermometers, data loggers.</li> </ul>	<p>conditions vary.</p> <ul style="list-style-type: none"> <li>Know that keeping conditions as consistent as possible can improve an enquiry.</li> <li>Begin to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.</li> <li>Choose the most appropriate equipment and use it correctly.</li> </ul>	<p>using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.</p>
<b>RECORDING DATA</b>	<ul style="list-style-type: none"> <li>Know that recording what has been seen can be done through drawing pictures</li> </ul>	<ul style="list-style-type: none"> <li>Know that recording the changes which have been seen</li> </ul>	<ul style="list-style-type: none"> <li>Know that there are non-standard units of measure which can be</li> </ul>	<ul style="list-style-type: none"> <li>Know that information can be gathered in a range of ways</li> </ul>	<ul style="list-style-type: none"> <li>Gather, record and classify data in a variety of ways.</li> </ul>	<ul style="list-style-type: none"> <li>Begin to record data and results of increasing complexity</li> </ul>	<ul style="list-style-type: none"> <li>Record data and results of increasing complexity using scientific</li> </ul>

	<ul style="list-style-type: none"> <li>• Begin to gather and record data to help in answering questions.</li> </ul>	<p>can be done through drawing a series of pictures</p> <ul style="list-style-type: none"> <li>• Begin to record data in simple prepare tables, pictorially or by taking photographs</li> </ul>	<p>used to take recordings.</p> <ul style="list-style-type: none"> <li>• Gather and record data in simple prepare tables, pictorially or by taking photographs</li> </ul>	<ul style="list-style-type: none"> <li>• Begin to record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.</li> <li>• Know how to write a simple scientific enquiry with a provided structure</li> </ul>	<ul style="list-style-type: none"> <li>• Record findings using simple scientific language, drawings, labelled diagrams, bar charts, keys and tables.</li> <li>• Begin to write a simple scientific enquiry write up including an introduction equipment, a numbered method, results and a conclusion</li> </ul>	<p>using scientific diagrams and labels, classification keys, tables, bar and line graphs.</p> <ul style="list-style-type: none"> <li>• Begin to decide how to record data from a choice of familiar approaches.</li> <li>• Begin to take accurate and precise measurements- N g kg mm cm mins secs.</li> <li>• Know how to write a simple scientific enquiry write up including an introduction equipment, a numbered method, results and a conclusion</li> </ul>	<p>diagrams and labels, classification keys, tables, bar, line or scatter graphs.</p> <ul style="list-style-type: none"> <li>• Know how to independently write a simple scientific enquiry write up including an introduction equipment, a numbered method, results and a conclusion</li> </ul>
<p><b>INTERPRETING AND COMMUNICATING RESULTS</b></p> 	<ul style="list-style-type: none"> <li>• Begin to use their observations and ideas to suggest answers to questions</li> </ul>	<ul style="list-style-type: none"> <li>• Using their observations and ideas to suggest answers to questions</li> <li>• Describe what happened in an investigation</li> </ul>	<ul style="list-style-type: none"> <li>• Record and communicate findings in a range of ways.</li> <li>• Talk about what they have found out and how.</li> <li>• Decide how to sort and group objects,</li> </ul>	<ul style="list-style-type: none"> <li>• Begin to use results to draw simple conclusions, make predictions, suggest improvements and raise further questions.</li> </ul>	<ul style="list-style-type: none"> <li>• Know that results are used to draw conclusions</li> <li>• Can spot patterns in results and look for changes, similarities and differences in</li> </ul>	<ul style="list-style-type: none"> <li>• Begin to report and present findings from enquiries using scientific language.</li> <li>• Begin to use evidence to justify ideas and conclusions.</li> </ul>	<ul style="list-style-type: none"> <li>• Report and present findings from enquiries using detailed scientific language.</li> <li>• Can report and present findings from enquiries, including conclusions,</li> </ul>

	<ul style="list-style-type: none"> <li>• Begin to talk about what they have found out and how.</li> </ul>	<ul style="list-style-type: none"> <li>• Answer their question in simple sentences using their observations or measurements</li> </ul>	<ul style="list-style-type: none"> <li>• With help, look for changes, patterns, similarities and differences in data.</li> <li>• Know that the conclusions of scientific enquiries can lead to further questions</li> </ul>	<ul style="list-style-type: none"> <li>• Identify scientific evidence that has been used to support or refute ideas or arguments.</li> </ul>	<ul style="list-style-type: none"> <li>• causal relationships and explanations of and degree of trust in results, in oral and written forms.</li> <li>• Know how to recognise and remove outliers from a set of data, justifying the removal</li> <li>• Know how to present brief oral findings from an enquiry, speaking clearly with confidence, using notes when necessary</li> </ul>	<ul style="list-style-type: none"> <li>• their data in order to draw simple conclusions and answer questions.</li> <li>• Know how to identify new questions arising from the data, make new predictions and find ways of improving what they have already done</li> <li>• Say what they have found out linking cause and effect</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to identify new questions arising from the data, make new predictions and find ways of improving what they have already done</li> <li>• Say what they have found out linking cause and effect</li> </ul>	
	<p>Children in the EYFS and KS1 are not expected to draw conclusions. They are expected to make observations which will help them to answer questions. They do not have the subject knowledge to give reasons for they observe so they cannot draw scientific conclusions.</p>							
<p><b>EVALUATING</b></p> 	<p>Children in the EYFS and KS1 are not expected to evaluate. However, children should be encouraged to consider their method and adapt this where necessary.</p>						<ul style="list-style-type: none"> <li>• Suggest improvement</li> <li>• Suggest new questions arising from the investigation</li> <li>• Suggest limitations</li> </ul>	<ul style="list-style-type: none"> <li>• Be able to explain/justify using evidence</li> <li>• Be able to talk about their degree of trust in the sources they used</li> <li>• Explain their degree of trust in their results</li> </ul>

## PROGRESSION IN SUBSTANTIVE KNOWLEDGE

LIVING THINGS AND THEIR HABITATS	EYFS	YEAR 2	YEAR 4	YEAR 5	YEAR 6
	<p>Explore the natural world around them making observations and drawing pictures of animals</p> <p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</p>	<p>Explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p>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 animals and plants, and how they depend on each other.</p> <p>Identify and name a variety of plants and animals in their habitats, including microhabitats.</p> <p>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.</p>	<p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>Describe the life process of reproduction in some plants and animals.</p>	<p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>
VOCABULARY	<p>animals, minibeasts (name some – ant, woodlouse, spider, worm, snail, centipede, caterpillar) alive, live, habitat, life cycle</p>	<p>living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, habitat, micro-habitat Names of local habitats e.g. pond, woodland Names of micro-habitats e.g.</p>	<p>habitat, micro-habitat, classification, classification keys, environment, human impact, positive, negative, migrate, hibernate</p>	<p>life-cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings</p>	<p>vertebrates, invertebrates, fish, amphibians, reptiles, birds, mammals, insects, spiders, snails, worms, flowering, non-flowering</p>

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
ANIMALS INCLUDING HUMANS	<p>Explore the natural world around them making observations and drawing pictures of animals</p> <p>Begin to understand the need to respect and care for the natural environment and all living things.</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p>	<p>Notice that animals, including humans, have offspring which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p>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.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>Describe the changes as humans develop to old age.</p>	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>

		Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.					
<b>VOCABULARY</b>	baby, child, adult, head, body, eyes, ears, mouth, teeth, leg, tail, wing, beak, nose, ear look after, care	claw, fin, scales, feathers, fur, paws, hooves touch, see, smell, taste, hear, fingers, skin, tongue names of animals experiences first hand	offspring, reproduction, growth, child, young/old stages (e.g. chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (e.g. meat, fish, vegetable, bread, rice, pasta	nutrition, nutrients carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, move, skull, ribs, spine, joints	digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolar, herbivore, carnivore, omnivore, producer, predator, prey, food chain	puberty, toddler, adolescent, adult, foetus, gestation, reproduction, life expectancy, genitals, hormones, menstruation,	heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle
<b>PLANTS</b>	<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>			
	Explore the natural world around them making observations and drawing pictures of plants  Plant seeds and care for growing plants.	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.  Identify and describe the basic structure of a variety of common flowering plants, including trees.	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 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.			
<b>VOCABULARY</b>	seed, soil, water, sun, light, dark, grow, leaf, flower, tree, stem, root	leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud, Names of trees in the local area Names of gardens, wild and flowering plants in the local area.	As for Year 1 and... light, shade, sun, warm, cool, water, grow, healthy	photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind/animal, water dispersal)			
	<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 4 (States of Matter)</b>	<b>Year 5</b>		
<b>MATERIALS</b>	Use all their senses in hands on exploration of materials.	Distinguish between an object and the material from which it is made.  Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.  Find out how the shapes of solid objects made from	Compare and group materials together, according to whether they are solids, liquids or gases.  Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).	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.		

		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	some materials can be changed by squashing, bending, twisting and stretching.	Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	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.
<b>VOCABULARY</b>	material, hard, soft, bendy, wood, metal, glass, plastic, see-through	object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, car/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, se-through, not see through	Names of materials: wood, metal, plastic, glass, brick, rock, paper, cardboard opaque, transparent, translucent, reflective, non-reflective, flexible, rigid Shape, push/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching	solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle	thermal/electrical, insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material
<b>FORCES</b>	<b>EYFS</b> Demonstrate familiarity with scientific concepts such as floating and sinking.	<b>YEAR 3</b> Compare how things move on different surfaces.  Notice that some forces need contact between two objects, but magnetic forces can act at a distance.  Observe how magnets attract or repel each other and attract some materials and not others.  Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.  Describe magnets as having two poles.  Predict whether two magnets will attract or repel each other, depending on which poles are facing.			<b>YEAR 5</b> Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.  Identify the effects of air resistance, water resistance and friction that act between moving surfaces.  Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.
<b>VOCABULARY</b>	float, sink, light, heavy, up, down	force, push, pull, twist, contact-force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, horse shoe magnet attract repel, magnetic material, metal, iron, steel, poles, north pole, south pole			force, gravity, earth, air resistance, friction, mechanisms, levers, pulleys, gears

<b>ELECTRICITY</b>	<b>YEAR 4</b>	<b>YEAR 6</b>
	<p>Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>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.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>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.</p> <p>Use recognised symbols when representing a simple circuit in a diagram.</p>
<b>VOCABULARY</b>	electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol	circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage
<b>LIGHT</b>	<b>YEAR 3</b>	<b>YEAR 6</b>
	<p>Recognise that they need light in order to see things and that dark is the absence of light.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</p> <p>Find patterns in the way that the size of shadows change</p>	<p>Recognise that light appears to travel in straight lines.</p> <p>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.</p> <p>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.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>
<b>VOCABULARY</b>	light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous	As for Year 3 and straight lines, rays
<b>SEASONAL CHANGE</b>	<b>RECEPTION</b>	<b>YEAR 1</b>
	Understand some important processes and changes in the natural world around them, including the seasons.	Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.
<b>VOCABULARY</b>	weather, sunny, rainy, cloudy, windy, snowy, frosty, cold, hot, warm, sky, sun, clouds introduce seasons with the weather type	Weather: sunny, rainy, windy, snowy Seasons: autumn, winter, spring, summer Sun, sunrise sunset, day length
<b>ROCKS</b>	<b>YEAR 3</b>	
	<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p>	
<b>VOCABULARY</b>	rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil, igneous, sedimentary, metamorphic	

<b>SOUND</b>	<b>YEAR 4</b>
	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.
<b>VOCABULARY</b>	Recognise that sounds get fainter as the distance from the sound source increases.
<b>VOCABULARY</b>	sound, source, vibrate, vibration, travel, pitch (high/low), volume, faint, loud, insulation
<b>EARTH AND SPACE</b>	<b>YEAR 5</b>
	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.
<b>VOCABULARY</b>	Earth, Sun, Moon, Mercury, Venus, Saturn, Venus, Mars, Uranus, Neptune, spherical, solar system, rotates, star, orbits, planets
<b>EVOLUTION AND INHERITENCE</b>	<b>YEAR 6</b>
	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.
<b>VOCABULARY</b>	Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils.