



## Science Knowledge and skills progression

as Changes/movement: The children will understand how our world continues to change due to the discoveries made in science. Life: All children will have the skills to describe and understand life around them and what animals including humans need to survive. Discovery: The children at Fawbert and Barnard's will learn about the discoveries scientists in the past have made in Science and how these impact on our everyday lives. The children, through first hand experience will make their own discoveries.							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	<ul style="list-style-type: none"> <li>Can describe the similarities and differences of different plants and trees.</li> <li>Describe different types of weather.</li> </ul>	<ul style="list-style-type: none"> <li>Can identify and name a variety of common wild and garden plants, including deciduous and evergreen.</li> <li>Can identify and describe the basic structure of a variety of common flowering plants, including trees.</li> <li>Can observe changes across the four seasons.</li> </ul> <p><u>Seasonal changes</u></p> <ul style="list-style-type: none"> <li>Can observe and describe weather associated with the seasons and how day length varies (<b>create weather station</b>).</li> </ul> <p>Working scientifically: They begin to take measurements,</p>	<ul style="list-style-type: none"> <li>Can observe and describe how seeds and bulbs grow into mature plants</li> <li>Can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul> <p>Working scientifically: The children answer questions developed with the teacher often through a scenario. The children are involved in planning how to use resources provided to answer the questions using different types of enquiry.</p>	<ul style="list-style-type: none"> <li>Can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</li> <li>Can 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.</li> <li>Can investigate the way in which water is transported within plants.</li> <li>Can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul> <p>Working scientifically: The children make systematic and careful observations. The children draw conclusions based on</p>	Revisit in Snap science unit Our changing world.	Revisit in Snap science unit reproduction in plants and animals and Our changing world.	Revisit in Snap science unit Our changing world.

		<p>initially by comparisons. Explore the world around them and use their senses to describe what they notice.</p> <p>The children record their observations e.g. using photographs, videos, drawings, labeled diagrams or in writing.</p> <p>The children recognise 'biggest and smallest', 'best and worst' etc. from their data.</p>	<p>Take measurements using non-standard measures.</p> <p>They carry out: tests to classify; comparative tests; pattern seeking enquiries; and make observations over time.</p> <p>The children record their measurements e.g. using prepared tables, pictograms, tally charts and bar charts.</p> <p>Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence.</p>	<p>their evidence and current subject knowledge.</p>			
Key concepts	Name parts of a plant and describe types of weather.		<p>How plants grow and develop.</p> <p>Where seeds and bulbs need to be planted differ.</p>				

Key vocab for plants	Root, stem, leaf, flower	Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud Names of trees in the local area. Names of garden and wild flowering plants in the local area Weather (sunny, rainy, windy, snowy etc.) Seasons, Sun, sunrise, sunset, day length	As for year 1 plus - light, shade, sun, warm, cool, water, grow, healthy	Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal – wind dispersal, animal dispersal, water dispersal			
Links with Snap Science units		Plant detectives Our changing world: plants Sensing seasons	The apprentice gardener	Our changing world How does your garden grow?			
Animals inc humans	<ul style="list-style-type: none"> <li>Can make observations of animals.</li> <li>Explain how animals have changed and why changes occur e.g. life cycle.</li> </ul>	<ul style="list-style-type: none"> <li>Can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>Can identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>Can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds</li> </ul>	<ul style="list-style-type: none"> <li>Notice that animals, including humans, have offspring which grow into adults</li> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>Describe the importance for humans of exercise,</li> </ul>	<ul style="list-style-type: none"> <li>Can 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>Can 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>Can describe the simple functions of the basic parts of the digestive system in humans.</li> <li>Can identify the different types of teeth in humans and their simple functions.</li> <li>Can construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>	<ul style="list-style-type: none"> <li>Can describe the changes as humans develop to old age.</li> </ul> <p>Working scientifically: They talk about how their scientific ideas change due to new evidence that they have gathered.</p>	<ul style="list-style-type: none"> <li>Can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> <li>Can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li> <li>Can describe the ways in which nutrients and water are transported within animals, including humans.</li> <li>Recognise that living things have changed over time and that</li> </ul>

		<p>and mammals, including pets).</p> <ul style="list-style-type: none"> <li>Can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul> <p>Working scientifically: While exploring the world, the children develop their ability to ask questions. Where appropriate, they answer these questions. They begin to take measurements, initially by comparisons. They carry tests out: to classify, compare and make observations over time. The children record their observations e.g. using photographs, videos, drawings, labeled diagrams or in writing.</p>	<p>eating the right amounts of different types of food, and hygiene</p> <p>Working scientifically: Make careful observations to support identification, comparison and noticing change. They use appropriate senses, aided by equipment such as magnifying glasses or digital microscopes, to make their observations. They carry out: tests to classify; comparative tests; pattern seeking enquiries; and make observations over time. They classify using simple prepared tables and sorting rings.</p>	<p>Working scientifically: The children consider their prior knowledge when asking questions. They independently use a range of question stems. Where appropriate, they answer these questions.</p> <p>The children make systematic and careful observations.</p>	<p>Working scientifically: The children select from a range of practical resources to gather evidence to answer questions. They recognise when secondary sources can be used to answer questions that cannot be answered through practical work.</p>		<p>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.</p> <p>Working scientifically: They talk about how new discoveries change scientific understanding.</p>
Key concepts	Describe the features of animal and how they change over time.		Describe life cycles and what animals need to survive. Describe how hygiene practices helps prevent		Describe the different functions of the digestive system and how the body absorbs water.		Describe the human circulatory system. Describe how diet, exercise, drugs and life style have an impact on the way our bodies function. <a href="#">Link to PSHCE.</a>

			illnesses and infections.				Describe how offspring inherit their features and why they are not identical to their parents.  How animals adapt to their environments.
Key vocab for Animals inc humans		Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves Names of animals experienced first-hand from each vertebrate group Parts of the body including those linked to PSHE teaching. Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue	Offspring, Reproduction, Growth, Child, Young/Old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), Exercise, Heartbeat, Pulse, Breathing, Hygiene, Germs, Disease, Nutrition, Food types (examples – meat, fish, vegetables, bread, rice, pasta)	Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, skull, ribs, spine, muscles, joints	Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain	Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, herbivore, carnivore, omnivore	Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs and lifestyle  Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils
Links with Snap Science units		Animal antics Looking at animals Our senses	Take care Growing up	Amazing bodies	Where does all that food go?	Circle of life	Body pump Body health
Materials	<ul style="list-style-type: none"> <li>Talk about features of their own immediate environment.</li> </ul> <p>Link with Geography</p>	<ul style="list-style-type: none"> <li>Can distinguish between an object and the material from which it is made</li> <li>Can identify and name a variety of everyday materials, including wood, plastic, glass,</li> </ul>	<ul style="list-style-type: none"> <li>Can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for</li> </ul>	<ul style="list-style-type: none"> <li>Can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</li> <li>Can describe in simple terms how fossils are formed when things that have lived are</li> </ul>	<ul style="list-style-type: none"> <li>Can compare and group materials together, according to whether they are solids, liquids or gases.</li> <li>Can observe that some materials change state</li> </ul>	<ul style="list-style-type: none"> <li>Can compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and</li> </ul>	

		<p>metal, water, and rock.</p> <ul style="list-style-type: none"> <li>• Can describe the simple physical properties of a variety of everyday materials.</li> <li>• Can compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul> <p>Working scientifically: While exploring the world, the children develop their ability to ask questions. Where appropriate, they answer these questions. They begin to take measurements, initially by comparisons. Explore the world around them and use their senses to describe what they notice. Children to use practical resources to answer questions. They carry tests out: to classify, compare and make</p>	<p>particular uses.</p> <ul style="list-style-type: none"> <li>• Can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul> <p>Working scientifically: The children are involved in planning how to use resources provided to answer the questions using different types of enquiry. Make careful observations to support identification, comparison and noticing change. They use appropriate senses, aided by equipment such as magnifying glasses or digital microscopes, to make their observations. The children use practical resources provided to gather</p>	<p>trapped within rock.</p> <ul style="list-style-type: none"> <li>• Can recognise that soils are made from rocks and organic matter.</li> </ul> <p>Link with Geography rivers with a locational study of the Lake district and it's mountains formed by different rocks. Further link to water cycle.</p> <p>Working scientifically: They plan investigations that they would like to carry out to answer questions. They gather evidence to answer the questions posed. The children sometimes decide how to record and present evidence. They record classifications e.g. using tables, Venn diagrams, Carroll diagrams. They communicate their findings to an audience both orally and in writing, using appropriate scientific vocabulary. The children draw conclusions based on their evidence and current subject knowledge. Children answer their own and others'</p>	<p>when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).</p> <ul style="list-style-type: none"> <li>• Can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul> <p>Working scientifically: Given a range of resources, the children decide for themselves how to gather evidence to answer the question. They use a range of equipment for measuring length, time, temperature and capacity. They use standard units for their measurements. The children select from a range of practical resources to gather evidence to answer questions.</p>	<p>thermal), and response to magnets.</p> <ul style="list-style-type: none"> <li>• Can name some materials that will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</li> <li>• Can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</li> <li>• Can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> <li>• Can demonstrate that dissolving, mixing and changes of state are reversible changes.</li> <li>• Can explain that some changes result in the formation of new materials, and that this kind of</li> </ul>	
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		<p>observations over time.  The children record their observations e.g. using photographs, videos, drawings, labeled diagrams or in writing.  The children recognise the 'biggest and smallest', 'best and worst' etc. from their data.</p>	<p>evidence to answer questions generated by themselves or the teacher.  They carry out: tests to classify; comparative tests; pattern seeking enquiries; and make observations over time.  The children record their measurements e.g. using prepared tables, pictograms, tally charts and bar charts.</p>	<p>questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. The answers are consistent with the evidence.</p>	<p>They follow their plan to carry out: observations and tests to classify; comparative and simple fair tests; observations over time; and pattern seeking.  Children are supported to present the same data in different ways in order to help with answering the question.  Children interpret their data to generate simple comparative statements based on their evidence. They begin to identify naturally occurring patterns and causal relationships.  Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry.</p>	<p>change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.</p> <p>Working scientifically:  Children independently ask scientific questions. The children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables.  Children use the scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests.  They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used.</p>	
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Key concepts	I can describe different materials.		Objects are made from one or more material due to their suitability for the task. Objects made of some materials can be changed. This can be a property of the material or depend on how the material has been processed e.g. thickness.		Solid, liquid and gases. How sand can be mistaken for a liquid. Melting, freezing, boiling point, evaporation, condensation. Water cycle		
Key vocab for materials		Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through	Suitable/unsuitable, use/useful, hard/soft, stretchy/stiff, rigid/flexible, waterproof/absorbent, strong/weak, rough/smooth, transparent/opaque, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching	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	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  Absorbent, thermal conductivity, melting, solid, liquid, gas, dissolve, solution, soluble.	
Links with Snap Science units		Everyday materials	Materials: Shaping up Materials: Good choices	Rock detectives	In a state	Everyday materials Marvellous mixtures All change Get sorted!	



<p>Living things and their habitats</p>	<p>Make observations about living things and their environments.</p>		<ul style="list-style-type: none"> <li>• Can explore and compare the differences between things that are living, dead, and things that have never been alive.</li> <li>• Can 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</li> <li>• Can identify and name a variety of plants and animals in their habitats, including micro-habitats.</li> <li>• Can describe how animals obtain their food from plants and other animals,</li> </ul>	<p>Revisit in 'Our Changing World' plants.</p>	<ul style="list-style-type: none"> <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 and have an impact on living things.</li> </ul> <p>Working scientifically: They recognise when secondary sources can be used to answer questions that cannot be answered through practical work.</p>	<ul style="list-style-type: none"> <li>• Can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</li> <li>• Describe the changes as humans develop to old age.</li> </ul> <p>Working scientifically: Children independently ask scientific questions</p>	<ul style="list-style-type: none"> <li>• Can describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.</li> <li>• Can give reasons for classifying plants and animals based on specific characteristics.</li> <li>• Can describe the life process of reproduction in some plants and animals.</li> <li>• Can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</li> <li>• Can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</li> </ul>
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			<p>using the idea of a simple food chain, and identify and name different sources of food.</p> <p>Working scientifically:</p> <p>The children answer questions developed with the teacher often through a scenario.</p> <p>Take measurements using non-standard measures.</p> <p>Make careful observations to support identification, comparison and noticing change.</p> <p>They carry out: tests to classify; comparative tests; pattern seeking enquiries; and make observations over time.</p> <p>The children record their measurements e.g. using prepared tables, pictograms, tally charts and bar charts.</p>				<ul style="list-style-type: none"> <li>• Can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul> <p>Working scientifically</p> <p>They decide what observations to make over and for how long. They look for patterns and relationships using a suitable sample.</p>
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			<p>They classify using simple prepared tables and sorting rings.</p> <p>Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their Key evidence.</p>				
Key concepts	<p>Name common living things and describe where you would find it e.g. Woodlouse under a rock and fish in the sea.</p>		<p>All objects are either living, dead or have never been alive.</p> <p>A habitat provides the basic needs of the animals and plants – shelter, food and water. Within a habitat there are different micro-habitats. The conditions of the habitat affect which plants and animals live there.</p>		<p>Living things can be classified – classification keys. Living things live in a habitat which may change naturally positively and negatively.</p>		<p>Living things can be formally grouped according to characteristics. Animals can be divided into two main groups which have common characteristics: vertebrates and invertebrates. Vertebrates can be divided into five small groups: fish; amphibians; reptiles; birds; and mammals. Invertebrates can be divided into a number of groups, including insects, spiders, snails and worms. Plants can be divided broadly into two main groups: flowering plants; and non-flowering plants.</p>

Key vocab for living things and their habitats	Names of living things, ocean, sea, woods		Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed Names of local habitats e.g. pond, woodland etc. Names of micro-habitats e.g. under logs, in bushes etc.		Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate		Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and non-flowering
Links with Snap Science units			Our changing world What is your habitat?		Human impact Our changing world	Reproduction in plants and animals	Our changing world Nature library
Light and sound	<b>Continuous provision:</b> Making shadows. Noticing how shadows are made using torches, sun etc.	<b>Continuous provision:</b> Noticing how shadows change at different times of the day. Notice how living things in the environment cast shadows (links with seasonal changes.)	<b>Continuous provision:</b> How shadows change due to the seasons (links with seasonal changes.)	<ul style="list-style-type: none"> <li>• Can recognise that they need light in order to see things and that dark is the absence of light.</li> <li>• Can notice that light is reflected from surfaces.</li> <li>• Can recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</li> </ul> <p>Covered in KS1 so only short recap may be needed. Can recognise that shadows are formed when the light from a light source is blocked by a solid object. Can find patterns in the way that the size of shadows change.</p>	<ul style="list-style-type: none"> <li>• Can identify how sounds are made, associating some of them with something vibrating.</li> <li>• Can recognise that vibrations from sounds travel through a medium to the ear.</li> <li>• Can find patterns between the pitch of a sound and features of the object that produced it.</li> <li>• Can find patterns between the volume of a sound and the strength of the</li> </ul>		<ul style="list-style-type: none"> <li>• Can use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.</li> <li>• Can explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.</li> <li>• Can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul> <p>Working scientifically They choose a type of enquiry to carry out and</p>

				<p>Working scientifically:  <b>The children make systematic and careful observations.</b>  They plan investigations that they would like to carry out to answer questions.  They gather evidence to answer the questions posed.  <b>The children draw conclusions based on their evidence and current subject knowledge.</b></p>	<p>vibrations that produced it.</p> <ul style="list-style-type: none"> <li>• Can recognise that sounds get fainter as the distance from the sound source increases.</li> </ul> <p>Working scientifically:  <b>They use a range of equipment for measuring length, time, temperature and capacity. They use standard units for their measurements.</b>  They select from a range of practical resources to gather evidence to answer questions.</p> <p>They follow their plan to carry out: observations and tests to classify; comparative and simple fair tests; observations over time; and pattern seeking.  <b>Children are supported to present the same data in different ways in order to help with answering the question.</b>  The children identify ways in</p>		<p><b>justify their choice. They decide what observations or measurements to make over time and for how long. They look for patterns and relationships using a suitable sample.</b>  <b>During an enquiry, they make decisions e.g. whether they need to: take repeat readings (fair testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further secondary sources (researching); in order to get accurate data (closer to the true value).</b>  <b>Children present the same data in different ways in order to help with answering the question.</b>  In their conclusions, children: identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge.</p>
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					<p>which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry.</p> <p>Children use their evidence to suggest values for different items tested using the same method e.g. the distance travelled by a car on an additional surface.</p>		
Key concepts				<p>Identify sources of light.</p> <p>Explain how we see objects and when we cannot see them.</p> <p>The light from the sun can damage our eyes and therefore we should not look directly at the sun. Know how we can protect our eyes.</p> <p>How shadows are formed.</p>	<p>How sound transfers from the source to our ears.</p> <p>What factors effect the volume of sound.</p>		<p>Light appears to travel in straight lines, and we see objects when light from them goes into our eyes. The light may come directly from light sources, but for other objects some light must be reflected from the object into our eyes for the object to be seen. Objects that block light (are not fully transparent) will cause shadows. Because light travels in straight lines the shape of the shadow will be the same as the outline shape of the object.</p>
Key vocab for light and sound				<p>Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror,</p>	<p>Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation</p>		<p>As for Year 3 - Light, plus straight lines, light rays</p>

				sunlight, dangerous			
Links with Snap Science units				Can you see me?	Good vibrations		Light up your world
Electricity	<p><b>Continuous provision:</b></p> <p>Children to experiment with wires, cells and bulbs.</p>	<p><b>Continuous provision:</b></p> <p>Children to experiment with wires, cells and bulbs to make a simple circuit.</p>	<p><b>Continuous provision:</b></p> <p>Children to experiment with wires, cells and bulbs to make a simple circuit and make changes to their circuit e.g. make the bulb brighter.</p>		<ul style="list-style-type: none"> <li>• Can identify common appliances that run on electricity.</li> <li>• Can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</li> <li>• Can identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.</li> <li>• Can 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> </ul>		<ul style="list-style-type: none"> <li>• Can 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>• Can compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</li> <li>• Can use recognised symbols when representing a simple circuit in a diagram.</li> </ul> <p>Working scientifically  They choose a type of enquiry to carry out and justify their choice.  Children present the same data in different ways in order to help with answering the question.  They talk about how new discoveries change scientific understanding.</p>

					<ul style="list-style-type: none"> <li>• Can recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul> <p>Working scientifically: The children select from a range of practical resources to gather evidence to answer questions. They follow their plan to carry out: observations and tests to classify; comparative and simple fair tests; observations over time; and pattern seeking.</p> <p>Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry.</p>		<p>In their conclusions, children: identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge.</p> <p>They identify any limitations that reduce the trust they have in their data.</p>
Key concepts					<p>How to include a switch into a circuit. Metals are good conductors so they can be used as wires in a circuit. Non-metallic solids are insulators except for graphite (pencil lead). Water, if not completely pure, also conducts</p>		<p>Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound. If you use a battery with a higher voltage, the same thing happens. Adding more bulbs to a circuit will make each bulb less bright. Using more</p>



					electricity.		motors or buzzers, each motor will spin more slowly and each buzzer will be quieter. Turning a switch off (open) breaks a circuit so the circuit is not complete and electricity cannot flow. Any bulbs, motors or buzzers will then turn off as well.
Key Vocab Electricity					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
Links to snap science units					Switched on		Danger! Low voltage
Earth, Sun and Moon (Forces)	Links with seasonal changes/lights and Shadows	Links with Seasonal changes/Light and Shadows.	Link with Materials unit 'Shaping up' and Seasonal changes/Light and Shadows.	Links with Seasonal changes/Light <ul style="list-style-type: none"> <li>• Can compare how things move on different surfaces.</li> <li>• Can notice that some forces need contact between</li> </ul>		Link with Space unit <ul style="list-style-type: none"> <li>• Can explain that unsupported objects fall towards the Earth because of the force of gravity acting between</li> </ul>	

				<p>two objects, but magnetic forces can act at a distance.</p> <ul style="list-style-type: none"> <li>• Can observe how magnets attract or repel each other and attract some materials and not others describe magnets as having two poles.</li> <li>• Can predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> <li>• Can 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> </ul> <p>Working scientifically:  The children consider their prior knowledge when asking questions. They independently use a range of question stems. Where appropriate, they answer these questions.  The children make systematic and careful observations.  Children answer their own and others' questions based on</p>		<p>the Earth and the falling object.</p> <ul style="list-style-type: none"> <li>• Can identify the effects of air resistance, water resistance and friction, which act between moving surfaces.</li> <li>• Can recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> <li>• Understand the Earth orbits the sun and that the sun does not move.</li> <li>• Can describe the movement of the Moon relative to the Earth.</li> <li>• Can describe the Sun, Earth and Moon as approximately spherical bodies.</li> <li>• Can 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> <p>Working scientifically</p>	
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				<p>observations they have made, measurements they have taken or information they have gained from secondary sources. The answers are consistent with the evidence.</p>		<p>Children independently ask scientific questions. The children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables. Select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale. Children use the scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests. They talk about how their scientific ideas change due to new evidence that they have gathered.</p> <p>They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used.</p>	
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Key concepts				A magnet attracts magnetic material. The strongest parts of a magnet are the poles. Repealing and attracting. Contact and non-contact forces.		Gravity Air resistance water resistance	
Key vocab Earth, Sun and Moon				Contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole		Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears	
Links to snap science unit				The power of forces		Feel the force Earth and Beyond	