



Brookwood Primary School Science Progression of Skills

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants		<p>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.</p> <p>Growing seeds/sunflowers – naming the parts</p>	<p>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.</p> <p>Growing seeds – what happens when you take away light/water/warmth?</p>	<p>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.</p> <p>Growing bulbs/something in the school garden?</p>			
Animals, including humans		<p>identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals ♣ identify and name a variety of common animals that are carnivores, herbivores and omnivore describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) ♣ identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</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 ♣ 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 ♣ identify the different types of teeth in humans and their simple functions ♣ construct and interpret a variety of food chains, identifying producers, predators and prey.</p> <p>Digestive system demonstration (blend fruit, put a cracker in your mouth, 2 x porridge. One with digestive enzymes in)</p> <p>Types of teeth - Organise the chn into groups and give each group the three types of food – an apple segment, a long chewy sweet and a banana – and the three items of cutlery; scissors, two forks and a potato masher.</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 ♣ recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function ♣ describe the ways in which nutrients and water are transported within animals, including humans.</p> <p>Model of a beating heart</p>
Everyday Materials		<p>distinguish between an object and the material from</p>	<p>identify and compare the suitability of a variety of</p>			<p>compare and group together everyday materials on the</p>	



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		<p>which it is made ♣ identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>♣ 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</p> <p><b>SINK OR FLOAT</b> Children carry out an investigation into whether 5 objects from around the classroom float or sink. They record their results on a simple table.</p>	<p>everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>♣ find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p><b>CHANGING SHAPE</b> Children carry out an investigation into how they can change the shape of up to 8 classroom objects. They predict before they test and then discuss their findings.</p>			<p>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 ♣ 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.</p> <p><b>Properties of Materials</b> Children investigate the properties of 10 different materials. They predict and then investigate whether the materials are electrical conductors, transparent, strong thermal conductors or magnetic. They record their results in a table, and then complete a Venn diagram containing 2 intersecting sets, choosing 2 properties by which to group the materials.</p>	
Seasonal Changes		observe changes across the four seasons ♣ observe and describe weather associated					



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		<p>with the seasons and how day length varies.</p> <p><b>Hours of Daylight</b> Children match 4 timelines showing the Sun's position in the sky to their respective seasons. Alternatively, children can investigate the changing shadows of objects on the playground throughout the day.</p>					
Living things and their habitats			<p>explore and compare the differences between things that are living, dead, and things that have never been alive ♣ identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other ♣ identify and name a variety of plants and animals in their habitats, including microhabitats ♣ 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><b>Investigating micro-habitats</b> Children carry out a field investigation into three local micro-habitats. They predict what they might see, draw what they can see, and after the investigation compare and contrast the three micro-habitats.</p>		<p>recognise that living things can be grouped in a variety of ways ♣ explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment ♣ recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p><b>Creating a classification key</b> Children investigate the local area and draw pictures of 8 different organisms. They create their own classification key by repeatedly asking dichotomous questions (with exactly two answers), splitting the group up until each group only has one member. They discuss the best sort of questions to ask when making a classification key.</p>	<p>describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird ♣ describe the life process of reproduction in some plants and animals.</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 ♣ give reasons for classifying plants and animals based on specific characteristics.</p>
Rocks				<p>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties ♣ describe in simple terms</p>			



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				<p>how fossils are formed when things that have lived are trapped within rock ♣ recognise that soils are made from rocks and organic matter.</p> <p><b>Investigating Rocks</b> Children investigate the properties of rocks. They predict and then observe whether 8 different rocks can be scratched with a nail, are porous, or can float in water. They use their results to create and label a 1-set Venn diagram.</p>			
Light				<p>recognise that they need light in order to see things and that dark is the absence of light ♣ notice that light is reflected from surfaces ♣ recognise that light from the sun can be dangerous and that there are ways to protect their eyes ♣ recognise that shadows are formed when the light from a light source is blocked by an opaque object ♣ find patterns in the way that the size of shadows change.</p> <p><b>Investigating shadow size</b> Children investigate how moving a light source affects the size of an object's shadow. They predict and then measure the width of the shadow cast when the light source is at a range of distances. They transfer their results from their table to a bar chart. Finally, they attempt to explain the relationship between light source distance and shadow size.</p>			<p>recognise that light appears to travel in straight lines ♣ use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye ♣ explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes ♣ use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> <p><b>Investigating Shadows</b> Children learn that shadows are formed when light is blocked by an opaque object, creating a pattern of light on a surface. Children investigate what happens to its shadow when an object is moved towards a light source. They predict and then measure the width of an objects shadow at different distances from the light source. Children record their information in</p>



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							a table and use it to create a line graph. They attempt to explain the relationship between distance and shadow width.
States of matter					<p>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) ♣ identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p><b>Thermal insulators</b> Children investigate how effective 4 different materials are at insulating a cold drink and slowing its increase in temperature. They use thermometers to measure the temperature of each cup every 15 minutes over the course of 2 hours. Children record their information in a table and then create a line graph showing the temperature of all 4 cups over a 2-hour period.</p> <p><b>Solids, Liquids or Gas?</b> Investigation of materials – groups of children given a range of materials to sort and investigate.</p> <p><b>Melting</b> Investigation of what affects the rate of ice melting. Variables: shapes, temperature, size of ice.</p>		



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					<p>Demonstration of melting points: on a tray on a hob, attempt to melt: wax, chocolate, butter and a coin – will of the materials melt at the same rate? Will they all freeze at the same rate?</p> <p><b>Investigating air:</b></p> <ol style="list-style-type: none"><li>1. Paper towel in the bottom of a cup which is pushed upside-down in a bowl of water.</li><li>2. Sponges: squeeze and let go. Put in water, squeeze in water, keep squeezing, lift it out and let it go. Squeeze it under the water again then let it go under the water. Lift out, squeeze and release. Put it into the water without squeezing it and lift out.</li><li>3. Weighing air: metre ruler with one slightly blown up balloon on one end and a fully blown up balloon on the other.</li><li>4. Raisins in lemonade: drop 3 or 4 raisins into a glass of lemonade</li><li>5. Ping pong ball challenge: move across the table without touching it.</li></ol> <p><b>Investigating ice, water and air:</b> 3 x balloons. 1 blown up, 1 filled with water and 1 filled with ice – investigate!</p>	
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<p>Forces and Magnets</p>				<p>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.</p> <p><b>Testing magnets</b> Children carry out an investigation to test the strength of up to 10 magnets. They predict and then measure how many 1p coins they can place in a bag held by a paper clip attracted by the magnet before the bag and paper clip fall off. Children transfer their results to a bar chart and place the magnets in order of strength.</p>		<p>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.</p> <p><b>Investigating friction</b> Children learn that friction is a force that prevents objects from sliding past each other easily when they are in contact with each other. Children investigate the best surface to place on a floor to prevent people from slipping. They predict and then measure the force required to make a shoe containing a weight slide across a range of surfaces. They present their results in a bar chart and attempt to answer the scientific question.</p>	
<p>Electricity</p>					<p>identify common appliances that run on electricity ♣ construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers ♣ identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery ♣ recognise that a</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 ♣ compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches ♣ use recognised symbols when representing</p>



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					switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit ♣ recognise some common conductors and insulators, and associate metals with being good conductors.		a simple circuit in a diagram.
Earth and Space						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.	
Evolution and Inheritance							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.
Sound					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	<b>Make a telephone: 2 paper cups and 4 metres of string. Alexander Graham Bell</b>	



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					volume of a sound and the strength of the vibrations that produced it ♣ recognise that sounds get fainter as the distance from the sound source increases.		
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Useful websites:

[Outstanding Science | Outstanding Science](#)