

# Science at Ashton Gate Primary School

2023-2024



All pupils at Ashton Gate are encouraged to explore and investigate the world around them, and their ideas about it, using problem solving, a real life context and hands on exploration. We believe that science matters and that scientific thinking is for everyone. We are a scientifically literate community. Children are encouraged to be curious, and follow their own lines of enquiry, where appropriate. Scientific understanding and skills are carefully planned to ensure progression of skills and knowledge across the school. Science is taught regularly, to ensure that skills can be built upon effectively.



## Planning overview for Science

2023-2024



	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
SC	Seasonal change is taught throughout the year in EYFS and KS1. There is a separate document where we outline everything, we do to support this learning.					

# Science at Ashton Gate Primary School



EYFS	Seasons/weather	Seasons/weather	Seasons/weather	Seasons/weather	Seasons/weather	Seasons/weather
	Looks closely at similarities, differences, patterns and change in nature	<b>Changes and processes in the Natural World</b>  Knows about similarities and differences in relation to places, objects, materials and living things	<b>Changes and processes in the Natural World</b>  Makes observations of animals and plants and explains why some things occur, and talks about changes		<b>Protecting our Planet</b>  Talks about the features of their own immediate environment and how environments might vary from one another  <b>Scientific enquiry</b>  Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	<b>Changes and processes</b>  Knows about similarities and differences in relation to places, objects, materials and living things

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Y1	Human body	Animals including humans	Materials	Plants	Comparing Materials	Growth and change
	<p>Identify, name, draw and label parts of the human body.</p> <p>Identify which part of the body is associated with each sense.</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 the common structure of a variety of common animals (fish, amphibians, reptiles, birds, mammals and</p>	<p>Distinguish between an object and the material from which it is made</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p>	<p>Identify and describe the basic structure of a variety of common flowering plants, including trees</p>	<p>Describe the simple physical properties of a variety of everyday materials</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties</p>	<p>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</p> <p>identify and describe the basic structure of a variety of common flowering plants, including trees</p>
		pets).				

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Y2	<p><b>Living things and their habitats (including living and non-living food chains)</b></p> <p>Understand that animals, including humans, have offspring which grow into adults</p> <p>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><b>Comparing materials</b></p> <p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard</p> <p>for particular uses</p> <p><b>Changing shape</b></p> <p>Describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p>	<p><b>Working scientifically</b></p> <p>Can make predictions about what might happen</p> <p>Perform simple comparative tests.</p> <p>Use simple equipment to observe closely including changes over time.</p> <p>Gather and record data to help in answering questions including from secondary sources of Information.</p>	<p><b>Healthy living and exercise</b></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><b>Plants</b></p> <p>observe and describe how seeds and bulbs grow into mature plants</p> <p>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>
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Y3	<b>Forces and magnets</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 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	<b>Parts of a plant</b> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers Investigate the way in which water is transported within plants	<b>How plants grow</b> Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal 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	<b>Animals including humans</b> 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	<b>Rocks and soils</b> Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties Describe in simple terms how fossils are formed when things that have lived are trapped within rock Recognise that soils are made from rocks and organic matter	<b>Light</b> Recognise that he/she needs light in order to see things and that dark is the absence of light Notice that light is reflected from surfaces Recognise that light from the sun can be dangerous and that there are ways to protect eyes Recognise that light from the sun can be dangerous and that there are ways to protect eyes Find patterns in the way that the size of shadows
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	Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing					change
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Y4	<p><b>Animals including humans (digestion)</b></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><b>States of matter</b></p> <p>Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>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</p> <p>(°C)</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p>	<p><b>Sound</b></p> <p>Identify how sounds are made, associating some of them with something vibrating</p> <p>Recognise that vibrations from sounds travel through a medium to the ear</p> <p>Find patterns between the pitch of a sound and features of the object that produced it</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>Recognise that sounds get fainter as the distance from the sound source increases</p>	<p><b>Electricity</b></p> <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</p> <p>in a simple series circuit</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors</p>	<p><b>Animals including humans (classifying)</b></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><b>Animals including humans (Dangers to living things)</b></p> <p>Recognise that environments can change and that this can sometimes pose dangers and have an impact on living things</p>
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Y5	Earth and space	Living things and their habitats (life cycles)	Forces	Separating materials	Properties of materials
	<p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>Describe the movement of the Moon relative to the Earth</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</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>Animals including humans (how humans change)</p> <p>Describe the changes as humans develop to old age</p> <p>Physics busking</p>	<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</p>	<p>Recognise that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p>	<p>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</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>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>

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Y6	<p><b>Electricity</b> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches Use recognised symbols when representing a simple circuit in a diagram</p>	<p><b>Light and Sight</b> 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>Evolution and inheritance</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 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</p>	<p><b>Classifying living things</b> 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>	<p><b>Circulation</b> 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><b>Engineering project and Great Science Share</b> Investigate a range of vehicles. Select materials appropriate for the job Follow instructions to construct the car Test and evaluate the car Showcase the cars</p>
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WS	All children have working Scientifically targets through the year. The planning for this is on a separate document.
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