

Ben Jonson Primary School Mapping of Science Across Whole School



Mapped by Muslimah Khanom

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	<p style="text-align: center;">Physical development Gross Motor Skills ELG~ To be able to negotiate spaces and move in different ways.</p> <p style="text-align: center;">Understanding the world ELG ~ To know about similarities and differences in relation to places, objects, materials and living things. Talk about the features of their own immediate environment and how environments might vary from one another. To use all their senses in hands-on exploration of natural materials. To explore how things work. To plant seeds and care for growing plants. To understand the key features of the life cycle of a plant and an animal. To begin to understand the need to respect and care for the natural environment and all living things. To explore materials and forces and to describe what they see, hear and feel whilst outside. To understand the effect of changing seasons on the natural world around them.</p>					
Year 1	<p style="text-align: center;">Animals Including Humans</p> <p>Can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Can identify and name a variety of common animals that are carnivores, herbivores and omnivores. with each sense.</p>	<p style="text-align: center;">Animals Including Humans</p> <p>Can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</p> <p>Can identify, name, draw and label the basic parts of the human body and say which part of the body is associate with each sense.</p>	<p style="text-align: center;">Everyday Materials</p> <p>Can distinguish between an object and the material from which it is made.</p> <p>Can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.</p>	<p style="text-align: center;">Everyday Materials</p> <p>Can describe the simple physical properties of a variety of everyday materials.</p> <p>Can compare and group together a variety of everyday materials on the basis of their simple properties.</p>	<p style="text-align: center;">Plants</p> <p>Can identify and name a variety of common plants, including garden plants, and wild plants.</p> <p>Can identify and name a variety of trees and those classified as deciduous and evergreen.</p>	<p style="text-align: center;">Plants</p> <p>Can describe the basic structure of a variety of common plants including roots, stem, leaves and flowers.</p> <p>Can observe changes across the four seasons.</p> <p>Can observe and describe the weather associated with the seasons and how day length varies.</p>
	<p>Ask simple questions and recognise that they can be answered in different ways Use science experiences to explore the world around them</p> <p>Use practical science to raise questions about how things are similar and different Use practical science to raise questions about how things change and how they happen</p> <p>Perform simple tests Use practical science to begin to work with different scientific enquiries (research, observing over time, sorting and classifying, fair testing, pattern seeking)</p> <p>Begin to choose ways they might answer scientific questions Begin to make predictions Ask questions and use simple secondary sources (eg internet, CD-ROMS, books, visitors) to find answers</p> <p>Observe closely using simple equipment Identify and classify phenomena Use their observations and ideas to suggest answers to questions</p> <p>Make comparisons between different objects, materials and living things and begin to sort them Observe changes over periods of time and discuss what has happened</p> <p>Use simple measurements and equipment (eg hand lenses, egg timers) to gather data Carry out simple tests Record simple data (bar charts, pictograms, tall chart etc.)</p> <p>Use their observations and ideas to suggest answers to questions Gather and record data to help in answering questions Notice patterns and relationships (with help)</p> <p>Record and communicate findings from relevant enquiries (including research) in a range of ways and begin to use simple scientific language (with help)</p>					
Year 2	<p style="text-align: center;">Uses of Everyday Materials</p> <p>Can identify a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard.</p> <p>Can find out how the shapes of solid objects made from some materials can be changed by squashing, bending twisting and stretching.</p>	<p style="text-align: center;">Uses of Everyday Materials</p> <p>Can compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p>	<p style="text-align: center;">Living Things and their Habitat</p> <p>Can explore and compare the differences between things that are living, dead and things that have never been alive.</p> <p>Can identify that most living things live in habitats to which they are suited.</p> <p>Can describe how different habitats provide for the basic</p>	<p style="text-align: center;">Living Things and their Habitat</p> <p>Can identify and name a variety of plants and animals in their habitats including micro-habitats.</p> <p>Can describe how animals obtain their food from plants and other animals, using the idea of a simple food chain,</p>	<p style="text-align: center;">Animals Including Humans</p> <p>Understands that animas, including humans, have offspring which grow into adults.</p> <p>Can find out about and describe the basic needs of animals, including humans for survival (water, food, air)</p> <p>Can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p style="text-align: center;">Plants</p> <p>Can observe and describe how seeds and bulbs grow into mature plants.</p> <p>Can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>

			needs of different kinds of animals and plants and how they depend on each other.	and identify and name different sources of food.		
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Year 3	<p>Rocks</p> <p>Can compare different kinds of rocks on the bases of their appearance and simple physical properties.</p> <p>Can group together different kinds of rocks on the bases of their appearance and simple physical properties.</p> <p>Can describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognises that soils are made from rocks and organic matter.</p>	<p>Forces and Magnets</p> <p>Can compare how things move on different surfaces.</p> <p>Understands that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Can observe how magnets attract or repel each other and attract some materials and not others.</p> <p>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.</p> <p>Can describe magnets as having two poles.</p> <p>Can predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p>Animals including Humans</p> <p>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</p> <p>Can identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Light</p> <p>Recognises that they need light in order to see things and that dark is the absence of light.</p> <p>Understands that light is reflected from surfaces.</p> <p>Recognises 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 a solid object.</p> <p>Can find patterns in the way that the size of shadows change.</p>	<p>Plants</p> <p>Can identify and describe the functions of different parts of flowering plants; roots, stem/trunk, leaves and flowers.</p> <p>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.</p>	<p>Plants</p> <p>Can investigate the way in which water is transported within plants.</p> <p>Can explore the part that flowers play in the life-cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>
	<p>Ask meaningful questions Use practical science to ask questions about the world Identify new questions arising from data Identify new questions arising from research</p> <p>Sort information into criteria that they have decided in a variety of ways – e.g. Venn, Carroll, flow diagram</p> <p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Decide which type of enquiry type to use to answer the questions they come up with (research, observing over time, sorting and classifying, fair testing, pattern seeking)</p> <p>Identify when to plan and carry out a fair test and suggest how to plan one Make predictions and hypotheses</p> <p>Recognise when secondary sources of information should be used then their questions cannot be answered practically</p> <p>Can make decisions about observations, what to make, how long to make them for and what equipment to use (with help)</p> <p>Identify where patterns might be found and what data to collect to identify them</p> <p>Take measurements using a range of scientific equipment with increasing accuracy and precision, taking repeated where appropriate</p> <p>Can use equipment like data loggers and microscopes Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Collect data from observations and measurements by using notes, tables and standard units Can identify simple changes, patterns, similarities and difference in data (with help)</p> <p>Identify similarities and differences in data Help make decisions on how to record and analyse this data</p> <p>Report and present findings from enquiries, including conclusions, causal relationships and explanations of, and degrees of trust in results, in oral and written forms such as displays and other presentations</p> <p>Draw simple conclusions from enquiries including research and data to answer questions Use scientific language to discuss ideas and communicate findings</p> <p>Use test results to make predictions to set up further comparative and fair tests Identify new questions arising from the data Find ways of making improvements to their investigations</p>					
Year 4	<p>Sound</p>	<p>Electricity</p> <p>Can identify common appliances that run on electricity.</p>	<p>Living Things and Their Habitats</p>	<p>Animals, Including Humans</p>	<p>States of Matter</p>	<p>States of Matter</p>

	<p>Can identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognises that vibrations from sounds travel through a medium to the ear.</p> <p>Can find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Can find patterns between the volume of a sound and the strength or the vibrations that produced it.</p> <p>Recognises that sounds get fainter as the distance from the sound source increases.</p>	<p>Can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>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.</p> <p>Recognises 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>Can recognise some common conductors and insulators and associate metals with being good conductors.</p>	<p>Recognise that living things can be grouped in a variety of ways.</p> <p>Can 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>Can construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>Can describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Can identify the different types of teeth in humans and their simple functions.</p> <p>Can construct and interpret a variety of food chains, identifying producers, predators and prey.</p> <p>Recognise that living things can be grouped in a variety of ways.</p>	<p>Can compare and group materials together according to whether they are solids, liquids or gases.</p> <p>Can observe that some materials change state when they are heated or cooled.</p> <p>Can measure or research the temperature at which materials change state in degrees Celsius.</p>	<p>Can identify the part played by evaporation and condensation in the water cycle</p> <p>Can associate the rate of evaporation with temperature</p>
<p>Ask meaningful questions Use practical science to ask questions about the world Identify new questions arising from data Identify new questions arising from research</p> <p>Sort information into criteria that they have decided in a variety of ways – e.g. Venn, Carroll, flow diagram</p> <p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Decide which type of enquiry type to use to answer the questions they come up with (research, observing over time, sorting and classifying, fair testing, pattern seeking)</p> <p>Identify when to plan and carry out a fair test and suggest how to plan one Make predictions and hypotheses</p> <p>Recognise when secondary sources of information should be used then their questions cannot be answered practically</p> <p>Can make decisions about observations, what to make, how long to make them for and what equipment to use (with help)</p> <p>Identify where patterns might be found and what data to collect to identify them</p> <p>Take measurements using a range of scientific equipment with increasing accuracy and precision, taking repeated where appropriate</p> <p>Can use equipment like data loggers and microscopes Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Collect data from observations and measurements by using notes, tables and standard units Can identify simple changes, patterns, similarities and difference in data (with help)</p> <p>Identify similarities and differences in data Help make decisions on how to record and analyse this data</p> <p>Report and present findings from enquiries, including conclusions, causal relationships and explanations of, and degrees of trust in results, in oral and written forms such as displays and other presentations</p> <p>Draw simple conclusions from enquiries including research and data to answer questions Use scientific language to discuss ideas and communicate findings</p> <p>Use test results to make predictions to set up further comparative and fair tests Identify new questions arising from the data Find ways of making improvements to their investigations</p>						
<p>Year 5</p>	<p>Earth and Space</p> <p>Can describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>Can describe the movement of the Moon relative to the Earth.</p> <p>Can describe the Sun, Earth and Moon as approximately spherical bodies.</p> <p>Can 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>Living Things and Their Habitats</p> <p>Can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p>	<p>Properties and Changes of Materials</p> <p>Can 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>Knows that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>Can use knowledge of solids, liquids and gases to describe how mixtures might be separated, including through filtering, sieving and evaporating.</p>	<p>Properties and Changes of Materials</p> <p>Can give reasons, based on evidence from comparative and fair tests, for the particular use of everyday materials, including metals, wood and plastic.</p> <p>Can demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>Can 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>Animals including Humans</p> <p>Can describe the life process of reproduction in some plants and animals.</p>	<p>Forces</p> <p>Can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Can identify the effects of air resistance, water resistance and friction that act between moving surfaces.</p> <p>Recognises that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>

Ask meaningful scientific questions Use their scientific experiences to raise different kinds of questions
 Use their scientific experiences to select and plan the most appropriate line of enquiry to answer scientific questions (research, observing over time, sorting and classifying, fair testing, pattern seeking)
 Talk about how scientific ideas have developed over time Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
 Recognise when and how to set up fair tests and explain which variables need to be controlled and why
 Use and the develop scientific keys and information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment
 Recognise which secondary sources will be most useful to research ideas and begin to separate opinion from fact Make predictions and hypotheses
 Take measurements using a range of scientific equipment with increasing accuracy and precision, taking repeated readings where appropriate
 Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Make decisions about what observations to make
 Make decisions about what measurements to make and how long to make them for and whether to repeat them Make decisions about what equipment to use to measure
 Explain how to use measuring equipment accurately Make decisions about how to record data and information
 Report and present findings from enquiries, including conclusions, causal relationships and explanations of, and degrees of trusts in results, in oral and written forms such as display s and other presentations.
 Use test results to make predictions to set up further comparative tests Look for different causal relationships in data and identify evidence that refutes or supports ideas Identify anomalies in results
 Use results from relevant enquiries (including research) to write conclusions and explanations Identify when further comparative tests and observations might be needed
 Use relevant scientific language and illustrations to discuss, communicate and justify scientific ideas Talk about how scientific ideas have developed over time
 Can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit

<p>Year 6</p>	<p>Animals, Including Humans Can describe the way in which nutrients and water are transported within animals, including humans. Can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p>	<p>Animals, Including Humans Can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognises the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p>	<p>Electricity Can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. 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. Can use recognised symbols when representing a simple circuit in a diagram.</p>	<p>Evolution and Inheritance Recognises that living things have changed over time. Recognises that fossils provide information about living things that inhabited the Earth millions of years ago. Recognises that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Can identify how animals and plants are adapted to suit their environment in different ways. Recognises that adaptation may lead to evolution.</p>	<p>Light Recognises that light appears to travel in straight lines. 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. 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. Can 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>Living Things and Their Habitats Can describe how living things are classified into broad groups according to common observable characteristics and based on similarities, including micro-organisms, plants and animals. Can give reasons for classifying plants and animals based on specific characteristics.</p>
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