



Eaton Park Academy: Science Progression Objectives

Coverage within the science National Curriculum

	Biology				Chemistry				Physics					
	Plants	Animals including humans	Living things & habitats	Evolution & Inheritance	Rocks	Everyday materials	Properties & changes of	States of matter	Light	Sound	Forces & magnets	Seasonal changes	Earth & Space	Electricity
Year 1	x	x				x						x		
Year 2	x	x	x			x								
Year 3	x	x			x				x		x			
Year 4		x	x					x		x				x
Year 5		x	x				x				x		x	
Year 6		x	x	x					x					x

Working Scientifically	Biology	Chemistry	Physics
Year One			
-I know how to ask simple scientific questions. -I know how to use simple equipment to make observations. -I know how to carry out simple tests. -I know how to identify and classify things.	<u>Plants</u> -I know and name a variety of common wild and garden plants. -I know and name the petals, stem, leaves and root of a plant. -I know and name the roots, trunk, branches and leaves of a tree.	<u>Everyday materials</u> -I distinguish between an object and the material it is made from. -I know the materials that an object is made from. -I know the difference between wood, plastic, glass, metal, water and rock.	<u>Seasonal changes</u> -I observe and know about the changes in the seasons. -I name the seasons and know about the type of weather in each season.

<p>-I know how to explain to others what I have found out.</p> <p>-I know how to use simple data to answer questions.</p>	<p><u>Animals including humans</u></p> <p>-I know and name a variety of animals including fish, amphibians, reptiles, birds and mammals.</p> <p>-I classify and know animals by what they eat [carnivore, herbivore and omnivore]</p> <p>-I know how to sort animals into categories, including fish, amphibians, reptiles, birds and mammals.</p> <p>-I know how to sort living and non-living things.</p> <p>-I know how to name the parts of the human body that I can see.</p> <p>-I know how to link the correct part of the human body to each sense.</p>	<p>-I know about the properties of everyday materials.</p> <p>-I group objects based on the materials they are made from.</p>	
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Year Two

<p>-I know how to ask simple scientific questions.</p> <p>-I know how to use simple equipment to make observations.</p> <p>-I know how to carry out simple tests.</p> <p>-I know how to identify and classify things.</p> <p>-I know how to explain to others what I have found out.</p> <p>-I know how to use simple data to answer questions.</p>	<p><u>Living things and their habitats</u></p> <p>-I identify things that are living, dead and never lived.</p> <p>-I know how a specific habitat provides for the basic needs of things living there [plants and animals].</p> <p>-I identify and name plants and animals in a range of habitats.</p> <p>-I match living things to their habitat.</p> <p>-I know how animals find their food.</p> <p>-I name some different sources of food for animals.</p>	<p><u>Uses of everyday materials</u></p> <p>-I identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard.</p> <p>-I know why a material might or might not be used for a specific job.</p> <p>-I know how materials can be changed by squashing, bending, twisting and stretching.</p>	<p style="text-align: center;">No content</p>
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	<p>-I know and can explain a food chain.</p> <p><u>Plants</u></p> <p>-I know how seeds and bulbs grow into plants.</p> <p>-I know what plants need in order to grow and stay healthy [water, light and suitable temperature].</p> <p>-I can grow my own plants in our allotment area and take care of them.</p> <p>-I can grow produce to use in our cookery clubs.</p> <p><u>Animals including humans</u></p> <p>-I know the basic stages in a life cycle for animals including humans and I can order them.</p> <p>-I know what animals and humans need to survive.</p> <p>-I know why exercise, a balanced diet and good hygiene are important for humans.</p> <p>-I can talk about what happens to humans when they dont take care of themselves and their bodies.</p>		
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Year Three

<p>-I know how to ask relevant scientific questions.</p> <p>-I know how to use observations and knowledge to answer scientific questions.</p>	<p><u>Plants</u></p> <p>-I know the function of different parts of flowering plants and trees.</p> <p>-I know what different plants need to help them survive.</p>	<p><u>Rocks</u></p> <p>-I compare and group rocks based on their appearance and physical properties, giving a reason.</p> <p>-I know how fossils are formed.</p>	<p><u>Light</u></p> <p>-I know what dark is – the absence of light.</p> <p>-I know that light is needed in order to see.</p> <p>-I know that light is reflected from a surface.</p>
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<p>-I know how to set up an enquiry to explore a scientific question including those I have created.</p> <p>-I know how to set up a fair test and explain why it is fair.</p> <p>-I know how to set up a test to compare two things.</p> <p>-I make careful and accurate observations including the use of standard units.</p> <p>-I know how to use equipment, including thermometers and data loggers to make measurements.</p> <p>-I gather, record, classify and present data in different ways to answer scientific questions.</p> <p>-I know how to use diagrams, keys, bar charts and tables using scientific language.</p> <p>-I know how to use findings to report in different ways including oral and written explanations and presentation.</p> <p>-I know how to draw conclusions and suggest improvements.</p> <p>-I know how to make a prediction with a reason.</p> <p>-I know how to identify differences, similarities and changes related to an enquiry.</p>	<p>-I know water is transported within plants.</p> <p>-I know the plant life cycle, especially the importance of flowers.</p> <p>-I can grow my own flowers.</p> <p><u>Animals including humans</u></p> <p>-I know about the importance of a nutritious, balanced diet and what needs to be in a balanced diet.</p> <p>-I know how nutrients, water and oxygen are transported within animals and humans.</p> <p>-I know about the skeletal system of a human.</p> <p>-I know about the muscular system of a human and I can name key muscles in the body.</p> <p>-I know about the purpose of the skeleton in humans and animals.</p>	<p>-I know how soil is made.</p> <p>-I know about and explain the difference between sedimentary, metamorphic and igneous rock.</p>	<p>I know and demonstrate how a shadow is formed.</p> <p>-I explore shadow size and explain the changes.</p> <p>-I know the danger of direct sunlight and describe how to keep protected.</p> <p><u>Forces and magnets</u></p> <p>-I know about and describe how objects moved on different surfaces.</p> <p>-I know how some forces require contact and some do not, giving examples.</p> <p>-I know about and explain how objects attract and repel in relation to objects and other magnets.</p> <p>-I predict whether objects will be magnetic and carry out an enquiry to test this out.</p> <p>-I know how magnets work.</p> <p>-I predict whether magnets will attract or repel and give a reason.</p>
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Year Four

-I know how to ask relevant scientific questions.

-I know how to use observations and knowledge to answer scientific questions.

-I know how to set up an enquiry to explore a scientific question including those I have created.

-I know how to set up a fair test and explain why it is fair.

-I know how to set up a test to compare two things.

-I make careful and accurate observations including the use of standard units.

-I know how to use equipment, including thermometers and data loggers to make measurements.

-I gather, record, classify and present data in different ways to answer scientific questions.

-I know how to use diagrams, keys, bar charts and tables using scientific language.

-I know how to use findings to report in different ways including oral and written explanations and presentation.

-I know how to draw conclusions and suggest improvements.

Living things and their habitats

-I group living things in different ways.

-I use classification keys to group, identify and name living things.

-I create classification keys to group, identify and name living things (for others to use).

-I know how changes to an environment could endanger living things.

Animals, including humans

-I identify and name parts of the human digestive system.

-I know the functions of the organs in the human digestive system.

-I identify and know the different types of teeth in humans.

-I know the functions of different human teeth.

-I use food chains to identify producers, predators and prey.

-I construct food chains to identify producers, predators and prey.

States of Matter

-I group materials based on their state of matter – solid, liquid, and gas.

-I know how some materials can change state.

-I explore how materials change state.

-I measure the temperature at which materials change state.

-I know about the water cycle.

-I know the part played by evaporation and condensation in the water cycle.

Sound

-I know how sounds is made.

-I know how sound travels from a source to our ears.

-I know how sounds are made, associating some of them with vibrating.

-I know the correlation between pitch and the object producing a sound.

-I know the correlation between the volume of a sound and the strength of the vibrations that produced it.

-I know what happens to a sound as it travels away from its source.

Electricity

-I identify and name appliances that require electricity to function.

-I construct a series circuit.

-I identify and name the components in a series circuit, including cells, wires, bulbs, buzzers and switches.

-I know how to draw a circuit diagram and label it.

-I predict and test whether a lamp will light within a circuit.

-I know the function of a switch in a circuit.

<p>-I know how to make a prediction with a reason.</p> <p>-I know how to identify differences, similarities and changes related to an enquiry.</p>			<p>-I know the difference between a conductor and an insulator, giving examples of each and explaining how I know.</p>
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Year Five

<p>-I know how to plan different types of scientific enquiry.</p> <p>-I know how to control variables in an enquiry.</p> <p>-I measure accurately and precisely using a range of equipment.</p> <p>-I know how to record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>-I use the outcome of test results to make predictions and set up a further comparative and fair tests.</p> <p>-I report findings from enquiries in a range of ways.</p> <p>-I know how to explain a conclusion from an enquiry.</p> <p>-I explain causal relationships in an enquiry.</p> <p>-I know how to relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory.</p>	<p><u>Living things and their habitats</u></p> <p>-I know the life cycle of different living things e.g. mammal, amphibian, insect, bird.</p> <p>-I know the differences between different life cycles and can explain these.</p> <p>-I know the process of reproduction in plants.</p> <p>-I know the processes of reproduction in animals.</p> <p><u>Animals including humans</u></p> <p>-I create a timeline to indicate the stages of growth in humans.</p>	<p><u>Properties and changes of materials</u></p> <p>-I compare and group materials based on their properties e.g. hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.</p> <p>-I know how a material dissolves to form a solution, explaining the process of dissolving.</p> <p>-I know and show how to recover a substance from a solution.</p> <p>-I know how some materials can be separated.</p> <p>-I demonstrate how materials can be separated e.g. through filtering, sieving and evaporating.</p> <p>-I know and can demonstrate that some changes are reversible and some are not.</p> <p>-I know how some changes result in the formation of a new material and that this is usually irreversible.</p> <p>-I know about reversible and irreversible changes.</p>	<p><u>Earth and space</u></p> <p>-I know about and explain the movement of the Earth and other planets relative to the Sun.</p> <p>-I know about and explain the movement of the moon relative to the Earth.</p> <p>-I know and demonstrate how night and day are created.</p> <p>-I describe the Sun, Earth and Moon, using the term spherical.</p> <p><u>Forces</u></p> <p>-I know what gravity is and its impact on our lives.</p> <p>-I identify and know the effect of air resistance.</p> <p>-I identify and know the effect of water resistance.</p> <p>-I identify and know the effect of friction.</p> <p>-I explain how levers, pulleys and gears allow a smaller force to have a greater effect.</p>
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<p>-I read, spell and pronounce scientific vocabulary accurately.</p>		<p>-I give reasons why materials should be used for specific purposes.</p>	
Year Six			
<p>-I know how to plan different types of scientific enquiry.</p> <p>-I know how to control variables in an enquiry.</p> <p>-I measure accurately and precisely using a range of equipment.</p> <p>-I know how to record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>-I use the outcome of test results to make predictions and set up a further comparative and fair tests.</p> <p>-I report findings from enquiries in a range of ways.</p> <p>-I know how to explain a conclusion from an enquiry.</p> <p>-I explain causal relationships in an enquiry.</p> <p>-I know how to relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory.</p> <p>-I read, spell and pronounce scientific vocabulary accurately.</p>	<p><u>Living things and their habitats</u></p> <p>-I classify living things into broad groups according to observable characteristics and based on similarities and differences.</p> <p>-I know how living things have been classified.</p> <p>-I give reasons for classifying plants and animals in a specific way.</p> <p><u>Animals including humans</u></p> <p>-I identify and name the main parts of the human circulatory system.</p> <p>-I know the function of the heart, blood vessels and blood.</p> <p>-I know the impact of diet, exercise, drugs and lifestyle on health.</p> <p>-I know the ways in which nutrients and water are transported in animals, including humans.</p> <p><u>Evolution and Inheritance</u></p> <p>-I know how the Earth and living things have changed over time.</p> <p>-I know how fossils can be used to find out about the past.</p>	<p>No content</p>	<p><u>Light</u></p> <p>-I know how light travels.</p> <p>-I know and demonstrate how we see objects.</p> <p>-I know why shadows have the same shape as the object that casts them.</p> <p>-I know how simple optical instruments work e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.</p> <p><u>Electricity</u></p> <p>-I know how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer.</p> <p>-I compare and give reasons for why components work and do not work in a circuit.</p> <p>-I draw circuit diagrams using correct symbols.</p>

	<p><i>-I know about reproduction and off-spring, recognising that off-spring normally vary and are not identical to their parents.</i></p> <p><i>-I know how animals and plants are adapted to suit their environment.</i></p> <p><i>-I link adaptation over time to evolution.</i></p> <p><i>-I know about evolution and can explain what it is.</i></p>		
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