



HAYES MEADOW PRIMARY SCHOOL

Science Progression Document

Early Years



Reception

Reception				
Biology			Chemistry	Physics
Animals	Animals, including Humans	Plants	Materials	Seasons
<p>Explore the natural world around them, making observations and drawing pictures of animals.</p> <p>Understand some important processes and changes in the natural world – life cycles.</p>	<p>Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating – tooth brushing - sensible amounts of ‘screen time’ - having a good sleep routine - being a safe pedestrian Manage their own basic hygiene and personal needs.</p> <p>Understand some important processes and changes in the natural world – life cycles.</p>	<p>Explore the natural world around them, making observations and drawing pictures of plants. Describe what they see, hear and feel while they are outside. Know some similarities and differences between the natural world around them and contrasting environment.</p>	<p>Understand some important processes and changes in the natural world around them including changing states of matter.</p>	<p>Understand some important processes and changes in the natural world around them including the seasons.</p> <p>Explore the natural world around them. Describe what they see, hear and feel while they are outside.</p>

Working Scientifically

Scientific attitudes	Planning	Observing and measuring	Analysis
<p>Encourage to be curious and ask questions about what they notice Learn and use new vocabulary in different contexts.</p>	<p>Learn new vocabulary (C&L) Ask questions to find out more and to check what has been said to them. (C&L)</p>	<p>Articulate their ideas and thoughts in well-formed sentences. Describe events in some detail. Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. Use new vocabulary in different contexts</p>	<p>Use talk to help work out problems and organise thinking and activities and to explain how things work and why they might happen.</p>



HAYES MEADOW PRIMARY SCHOOL

Science Progression Document

KEY STAGE ONE



Year 1				
Biology			Chemistry	Physics
Animals, including Humans	Animals, including Humans	Plants	Everyday Materials	Seasonal Change
Know and classify animals by what they eat (carnivore, herbivore and omnivore) Know how to sort by living and non-living things. Know how to classify a range of animals by amphibian, reptile, mammal, fish and bird.	Know the name of parts of the body that can be seen. Know about the five senses and link them with parts of the body.	Know and name a variety of common wild and garden plants Know and name the petals, stem, leaves and root of a plant. Know and name the roots, trunk, branches and leaves of a tree.	Know the name of the materials an object is made from. Know about the properties of everyday materials.	Name the seasons and know about the type of weather in each season. Observe and describe how day length varies across the seasons. Observe changes in the seasons.

Working Scientifically			
Scientific attitudes	Planning	Observing and measuring	Analysis
Encourage to be curious and ask questions about what they notice Begin to be curious and ask questions about what they notice Read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1	Ask simple questions and recognise that they can be answered in different ways	Observe closely, using simple equipment safely Perform simple tests Gather and record data to help in answering questions Identify and classify findings	Use their observations and ideas to suggest answers to questions



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KEY STAGE ONE



Year 2

Year 2				
Biology			Chemistry	Physics
Animals, including Humans	Living things and their habitats	Plants	Materials and their everyday uses	
<p>Know the basic stages in a life cycle for animals (including humans)</p> <p>Know why a balanced diet and good hygiene are important for humans.</p>	<p>Classify things by living, dead or never lived.</p> <p>Know how a basic habitat provides for the basic needs of things living there (plants and animals)</p> <p>Match living things to their habitat.</p> <p>Name some different sources of food for animals.</p> <p>Know about and explain a simple food chain.</p>	<p>Know and explain how seeds and bulbs grow into plants.</p> <p>Know what plants need in order to grow and stay healthy (water, light and suitable temperature)</p>	<p>Know how materials can be changed by squashing, bending, twisting and stretching.</p> <p>Know why a material might or might not be used for a specific job.</p>	

Working Scientifically

Scientific attitudes	Planning	Observing and measuring	Analysis
<p>Encourage to be curious and ask questions about what they notice</p> <p>Begin to be curious and ask questions about what they notice</p> <p>Read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1</p>	<p>Ask simple questions and recognise that they can be answered in different ways</p>	<p>Observe closely, using simple equipment safely</p> <p>Perform simple tests</p> <p>Gather and record data to help in answering questions</p> <p>Identify and classify findings</p>	<p>Use their observations and ideas to suggest answers to questions</p>



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KEY STAGE TWO



Year 3				
Biology		Chemistry	Physics	
Animals including Humans	Plants	Rocks and soils	Forces and Magnets	Light and Dark
<p>Know about the importance of a nutritious, balanced diet</p> <p>Know how nutrients, water and oxygen are transported within animals and humans</p> <p>Know about the skeletal and muscular system of a human and some other animals</p> <p>Know that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Know the function of different parts of flowering plants and trees</p> <p>Know how water is transported within plants</p> <p>Know the plant life cycle, especially the importance of flowers.</p>	<p>Compare and group rocks based on their appearance and physical properties, giving reasons</p> <p>Know how soil is made and how fossils are formed</p> <p>Know about and explain the difference between sedimentary, metamorphic and igneous rock</p>	<p>Know about and describe how objects move on different surfaces</p> <p>Know how a simple pulley works and use one to lift an object</p> <p>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>Know about and explain how magnets attract and repel</p> <p>Predict whether magnets will attract or repel and give a reason.</p>	<p>Know that dark is the absence of light</p> <p>Know that light is needed in order to see and is reflected from a surface</p> <p>Know and demonstrate how a shadow is formed and explain how a shadow changes shape</p> <p>Know about the danger of direct sunlight and describe how to keep protected.</p>

Working Scientifically					
Scientific attitudes	Planning	Observing and measuring	Analysis	Evaluating	Measurements
<p>Ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them.</p> <p>Draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.</p> <p>Read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.</p>	<p>Ask relevant questions and use different types of scientific enquiries to answer them</p> <p>Set up simple practical enquiries, comparative and fair tests.</p>	<p>Make systematic and careful observations and, where appropriate, take accurate measurements, using a range of equipment safely, including thermometers and data loggers.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p>	<p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Use results to draw simple conclusions and make predictions for new values.</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Use straightforward scientific evidence to answer questions or to support findings.</p>	<p>Use results to suggest improvements and raise further questions.</p>	<p>Use standard units</p>



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KEY STAGE TWO



Year 4				
Biology		Chemistry	Physics	
Animals including Humans	Living things and their habitats	States of Matter	Electricity	Sound
<p>Identify and name the parts of the human digestive system.</p> <p>Know the functions of the organs in the human digestive system.</p> <p>Identify and know the different types of human teeth.</p> <p>Know the functions of different human teeth.</p>	<p>Use classification keys to group, identify and name living things.</p> <p>Know how changes to an environment could endanger living things.</p> <p>Use and construct food chains to identify producers, predators and prey.</p>	<p>Group materials based on their state of matter (solid, liquid, gas)</p> <p>Know the temperature at which materials change state</p> <p>Know about and explore how some materials can change state.</p> <p>Know the part played by evaporation and condensation in the water cycle.</p>	<p>Identify and name appliances that require electricity to function.</p> <p>Construct a series circuit.</p> <p>Identify and name the components in a series circuit.</p> <p>Predict and test whether a lamp will light within a circuit.</p> <p>Know the function of a switch.</p> <p>Know the difference between a conductor and an insulator.</p>	<p>Know how sound is made associating some of them with vibrating.</p> <p>Know how sound travels from a source to our ears.</p> <p>Know the correlation between pitch and the object producing a sound.</p> <p>Know the correlation between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Know what happens to a sound as it travels away from its source.</p>

Working Scientifically					
Scientific attitudes	Planning	Observing and measuring	Analysis	Evaluating	Measurements
<p>Ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them.</p> <p>Draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.</p> <p>Read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.</p>	<p>Ask relevant questions and use different types of scientific enquiries to answer them</p> <p>Set up simple practical enquiries, comparative and fair tests.</p>	<p>Make systematic and careful observations and, where appropriate, take accurate measurements, using a range of equipment safely, including thermometers and data loggers.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p>	<p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Use results to draw simple conclusions and make predictions for new values.</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Use straightforward scientific evidence to answer questions or to support findings.</p>	<p>Use results to suggest improvements and raise further questions.</p>	<p>Use standard units</p>



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KEY STAGE TWO



Year 5

Biology		Chemistry	Physics	
Animals including Humans	Plants	Properties and Changes	Forces	Earth and Space
<p>Know the life cycle of different living things eg. Mammal, amphibian, insect, plants and bird.</p> <p>Create a timeline to indicate stages of growth in humans.</p> <p>Know the difference between different life cycles.</p> <p>Know the process of reproduction in animals.</p>	<p>Know the process of reproduction in plants.</p>	<p>Compare and group materials based on their properties eg. Hardness, solubility.</p> <p>Know and demonstrate how some materials can be separated eg. Through filtering, sieving and evaporating.</p> <p>Know and explain how a material dissolves to form a solution.</p> <p>Know and demonstrate that some of the changes are reversible and some are not.</p> <p>Know how some changes result in the formation of a new material and this is usually irreversible.</p>	<p>Know what gravity is and its impact on our lives.</p> <p>Identify and know the effect of air and water resistance.</p> <p>Identify and know the effect of friction.</p> <p>Explain how levers, pulleys and gears allow a smaller force to have a greater effect.</p>	<p>Know about and explain the movement of the Earth and other planets relative to the Sun.</p> <p>Know about and explain the movement of the Moon relative to the Earth.</p> <p>Know and demonstrate how night and day are created.</p> <p>Describe the sun, earth and moon (using the term spherical).</p>

Working Scientifically

Scientific attitudes	Planning	Observing and measuring	Analysis	Evaluating	Measurements
<p>Identify scientific evidence that has been used to support or refute ideas or arguments</p> <p>Select the most appropriate ways to answer science questions using different types of scientific enquiry</p> <p>Read, spell and pronounce scientific vocabulary correctly.</p>	<p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>	<p>Take measurements, using a range of scientific equipment safely, with increasing accuracy and precision, taking repeat readings.</p> <p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables where appropriate.</p>	<p>Present data using a variety of scatter graphs, bar and line graphs.</p> <p>Report and present findings from enquiries, including conclusions, causal relationships and explanations in oral and written forms such as displays and other presentations.</p>	<p>Use test results to make predictions to set up further comparative and fair tests.</p> <p>Discuss the degree of trust in results.</p>	<p>Use standard units.</p>



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KEY STAGE TWO



Year 6				
Biology			Physics	
Evolution and inheritance	Classification of animals	Heart and circulatory system	Light	Electricity
<p>Know how the earth and living things have changed over time.</p> <p>Know how fossils can be used to find out about the past.</p> <p>Know about reproduction and offspring.</p> <p>Know how animals and plants are adapted to suit their environment.</p> <p>Link adaptation over time to evolution.</p> <p>Know about evolution and can explain what it is.</p>	<p>Classify living things into broad groups according to observable characteristics and based on similarities and differences.</p> <p>Know how living things have been classified.</p> <p>Give reasons for classifying plants and animals in a specific way.</p>	<p>Identify and name the main parts of the human circulatory system.</p> <p>Know the function of the heart, blood vessels and blood.</p> <p>Know the impact of diet, exercise, drugs and lifestyle on health.</p> <p>Know the ways in which nutrients and water are transported in animals, including humans.</p>	<p>Know how light travels.</p> <p>Know and demonstrate how we see objects.</p> <p>Know why shadows have the same shape as the object that casts them.</p> <p>Know how simple optical instruments work eg. Periscope, telescope, binoculars, mirror, magnifying glass etc.</p>	<p>Compare and give reasons for why components work and do not work in a circuit</p> <p>Draw circuit diagrams using correct symbols.</p> <p>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>

Working Scientifically					
Scientific attitudes	Planning	Observing and measuring	Analysis	Evaluating	Measurements
<p>Identify scientific evidence that has been used to support or refute ideas or arguments</p> <p>Select the most appropriate ways to answer science questions using different types of scientific enquiry</p> <p>Read, spell and pronounce scientific vocabulary correctly.</p>	<p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>	<p>Take measurements, using a range of scientific equipment safely, with increasing accuracy and precision, taking repeat readings.</p> <p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables where appropriate.</p>	<p>Present data using a variety of scatter graphs, bar and line graphs.</p> <p>Report and present findings from enquiries, including conclusions, causal relationships and explanations in oral and written forms such as displays and other presentations.</p>	<p>Use test results to make predictions to set up further comparative and fair tests.</p> <p>Discuss the degree of trust in results.</p>	<p>Use standard units.</p>