

## Subject Specific-Skills: Age-related Expectations in Science

### Progression

Year Group	Biology	Chemistry	Physics
<b>1</b>	Plants Animals (including Humans)	Everyday Materials	Seasonal Changes
<b>2</b>	Living Things in their habitats Plants Animals, including Humans	Uses of Everyday Materials	
<b>3</b>	Plants Animals, including Humans	Rocks	Light Forces and Magnets
<b>4</b>	Living Things and their Habitats Animals, including Humans	States of Matter	Sound Electricity
<b>5</b>	Living Things and their Habitats Animals, including Humans	Reversible and Irreversible Changes	Earth and Space  Forces
<b>6</b>	Living Things and their Habitats Animals, including Humans Evolution and Inheritance		Light Electricity

Year 1

Working Scientifically	Biology	Chemistry	Physics
<p>To be able to:</p> <ul style="list-style-type: none"> <li>• Ask simple scientific questions</li> <li>• Use simple equipment to make observations</li> <li>• Carry out simple tests</li> <li>• Identify and classify things</li> <li>• Suggest what I have found out</li> <li>• Use simple data to answer questions</li> </ul>	<p><b>Plants</b></p>	<p><b>Everyday Materials</b></p>	<p><b>Seasonal Changes</b></p>
	<p>To be able to:</p> <ul style="list-style-type: none"> <li>• Name a variety of common plants.</li> <li>• Name the petals, stem, leaf and root of a plant.</li> <li>• Name the roots, trunk, branches and leaves of a tree,</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>• Distinguish between an object and the material it is made of.</li> <li>• Explain the materials that an object is made from.</li> <li>• Name wood, plastic, glass, metal, water and rock,</li> <li>• Describe the properties of everyday materials.</li> <li>• Group objects based on the materials they are made from.</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>• Observe and comment on changes in the seasons.</li> <li>• Name the seasons and suggest the types of weather in each season.</li> </ul>
	<p><b>Animals (including humans)</b></p>		
<p>To be able to:</p> <ul style="list-style-type: none"> <li>• Name a variety of animals</li> <li>• Classify and name animals by what they eat (carnivore, herbivore, omnivore).</li> <li>• Sort animals into categories.</li> <li>• Sort living and non-living things</li> <li>• Name the parts of the human body I can see.</li> <li>• Link the correct part of the human body to each sense.</li> </ul>			

Year 2

Working Scientifically	Biology	Chemistry
<p>To be able to:</p> <ul style="list-style-type: none"> <li>• Ask simple scientific questions</li> <li>• Use simple equipment to make observations</li> <li>• Carry out simple tests</li> <li>• Identify and classify things</li> <li>• Explain what I have found out</li> <li>• Use simple data to answer questions</li> </ul>	<p><b>Living things in their Habitats</b></p>	<p><b>Uses of everyday Materials</b></p>
	<p>To be able to:</p> <ul style="list-style-type: none"> <li>• Identify things that are living, dead, never lived.</li> <li>• Describe how a habitat provides for the basic needs of living things – plants/ animals.</li> <li>• Identify and name plants and animals in different habitats.</li> <li>• Match living things to their habitat,</li> <li>• Describe how animals find their food.</li> <li>• Name some different sources of food for animals.</li> <li>• Explain a simple food chain</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>• Identify and name a range of materials.</li> <li>• Suggest why a material might or might not be used for a specific job.</li> <li>• Explore how shapes can be changed by squashing, bending, twisting and stretching</li> </ul>
	<p><b>Plants</b></p>	
	<ul style="list-style-type: none"> <li>• Describe how plants and seeds grow into plants.</li> <li>• Describe what plants need in order to grow and stay healthy.</li> </ul>	
<p><b>Animals (including humans)</b></p>		
<ul style="list-style-type: none"> <li>• Explain the basic stages in a life cycle for animals, including humans.</li> <li>• Describe what animals and humans need to survive.</li> <li>• Describe why exercise, a balance diet and good hygiene are important for humans.</li> </ul>		

Working Scientifically	Biology	Chemistry	Physics
<p>To be able to:</p> <ul style="list-style-type: none"> <li>• Ask relevant scientific questions.</li> <li>• Use observations and knowledge to answer scientific questions.</li> <li>• Set up a simple enquiry to explore a scientific question.</li> <li>• Set up a test to compare two things.</li> <li>• Set up a fair test and explain why it is fair.</li> <li>• Make careful and accurate observations, including the use of standard units.</li> <li>• Use equipment to make measurements.</li> <li>• Gather, record, classify and present data in different ways to answer scientific questions.</li> <li>• Use diagrams, keys bar charts and tables, using scientific language.</li> <li>• Use findings to report in different ways, including oral and written explanations.</li> <li>• Draw conclusions and suggest improvements.</li> <li>• Make a prediction with a reason.</li> <li>• Identify differences, similarities and changes related to an enquiry.</li> </ul>	<p><b>Plants</b></p> <p>To be able to:</p> <ul style="list-style-type: none"> <li>• Describe the function of different parts of plants and trees.</li> <li>• Explore and describe the needs of different plants for survival.</li> <li>• Explore and describe how water is transported within plants.</li> <li>• Describe the plant life cycle, especially the importance of flowers.</li> </ul>	<p><b>Rocks</b></p> <p>To be able to:</p> <ul style="list-style-type: none"> <li>• Compare and group rocks based on their appearance and physical appearance and physical properties, giving a reason.</li> <li>• Describe how soil is made.</li> <li>• Describe and explain the difference between sedimentary and igneous rock.</li> </ul>	<p><b>Light</b></p> <p>To be able to:</p> <ul style="list-style-type: none"> <li>• Describe what dark is,</li> <li>• Explain that light is needed in order to see.</li> <li>• Explain that light is reflected from a surface.</li> <li>• Explore shadow size and explain.</li> <li>• Explain the danger of direct sunlight and describe how to keep protected.</li> </ul>
	<p><b>Animals, including humans</b></p> <p>To be able to:</p> <ul style="list-style-type: none"> <li>• Explore the importance of a nutritious balanced diet.</li> <li>• Explain how nutrients, water and oxygen are transported within animals and humans.</li> <li>• Describe and explain the skeletal and muscular system of a human.</li> <li>• Describe the purpose of the skeleton in humans and in animals.</li> </ul>		<p><b>Forces and Magnets</b></p> <p>To be able to:</p> <ul style="list-style-type: none"> <li>• Explore and describe how objects move on different surfaces.</li> <li>• Explain how some forces require contact and some do not, giving examples.</li> <li>• Explore and explain how objects attract and repel in relation to objects and other magnets.</li> <li>• Predict whether objects will be magnetic and carry out an enquiry to test this out.</li> <li>• Describe how magnets work.</li> <li>• Predict whether magnets will attract or repel and give a reason.</li> </ul>

Working Scientifically	Biology	Chemistry	Physics
<p>To be able to:</p> <ul style="list-style-type: none"> <li>• Ask relevant scientific questions.</li> <li>• Use observations and knowledge to answer scientific questions.</li> <li>• Set up a simple enquiry to explore a scientific question.</li> <li>• Set up a test to compare two things.</li> <li>• Set up a fair test and explain why it is fair.</li> <li>• Make careful and accurate observations, including the use of standard units.</li> <li>• Use equipment to make measurements.</li> <li>• Gather, record, classify and present data in different ways to answer scientific questions.</li> <li>• Use diagrams, keys bar charts and tables, using scientific language.</li> <li>• Use findings to report in different ways, including oral and written explanations.</li> <li>• Draw conclusions and suggest improvements.</li> <li>• Make a prediction with a reason.</li> </ul> <p>Identify differences, similarities and changes related to an enquiry.</p>	<p><b>Living things and their Habitats</b></p> <p>To be able to:</p> <ul style="list-style-type: none"> <li>• Group living things in different ways</li> <li>• Use classification keys to group, identify and name living things.</li> <li>• Create classification keys to group, identify and name living things.</li> <li>• Describe how changes to an environment could endanger living things.</li> <li>• Construct food chains to identify producers, predators and prey</li> </ul>	<p><b>States of Matter</b></p> <p>To be able to:</p> <ul style="list-style-type: none"> <li>• Group materials based on their state of matter (solid, liquid, gas).</li> <li>• Describe how some materials can change state.</li> <li>• Explain how materials change state.</li> <li>• Measure the temperature of materials which change state.</li> <li>• Describe the water cycle.</li> <li>• Explain the part played by evaporation and condensation in the water cycle.</li> </ul>	<p><b>Sound</b></p> <p>To be able to:</p> <ul style="list-style-type: none"> <li>• Describe how sound is made.</li> <li>• Explain how sound travels from a source to our ears.</li> <li>• Explain the place. of vibration in hearing</li> <li>• Explore the correlation between pitch and the object producing a sound.</li> <li>• Explain the correlation between the volume of a sound and the strength of the vibrations that produced it.</li> <li>• Describe what happens to a sound as it travels away from its' source.</li> </ul>
	<p><b>Animals, including humans</b></p>		<p><b>Electricity</b></p>
	<p>To be able to:</p> <ul style="list-style-type: none"> <li>• Identify and name the parts of the human digestive system.</li> <li>• Describe the functions of the organs in the human digestive system.</li> <li>• Identify and describe the different types of teeth in humans.</li> <li>• Describe the functions of different human teeth.</li> <li>• Use food chains to identify producers, predators and prey.</li> </ul>		<p>To be able to:</p> <ul style="list-style-type: none"> <li>• Identify and name appliances that need electricity to function.</li> <li>• Conduct a series circuit.</li> <li>• Identify and name the components in a series circuit.</li> <li>• Draw a circuit diagram.</li> <li>• Predict and test whether a lamp will light within a circuit.</li> <li>• Describe the function of a switch in a circuit.</li> <li>• Describe the difference between a conductor and an insulator, giving examples of each.</li> </ul>

Year 5

Working Scientifically	Biology	Chemistry	Physics
<p>To be able to:</p> <ul style="list-style-type: none"> <li>Plan different types of scientific enquiry.</li> <li>Control variables in an enquiry.</li> <li>Measure accurately and precisely using a range of equipment.</li> <li>Record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</li> <li>Use the outcome of test results to make predictions and set up a further comparative fair test.</li> <li>Report findings from enquires in a range of ways.</li> <li>Explain a conclusion from an enquiry.</li> <li>Explain. Causal relationships in an enquiry.</li> <li>Relate the outcomes from an enquiry to scientific knowledge in order to state whether evidence supports or refutes and argument/ theory.</li> <li>Read, spell and pronounce scientific vocabulary accurately</li> </ul>	<p style="text-align: center;"><b>Living things and their habitats</b></p>	<p style="text-align: center;"><b>Reversible and Irreversible Changes</b></p>	<p style="text-align: center;"><b>Earth and Space</b></p>
	<p>To be able to:</p> <ul style="list-style-type: none"> <li>Describe the life cycle of different living things.</li> <li>Describe the differences between different life cycles.</li> <li>Describe the process of reproduction in plants and in animals.</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>Compare and group materials based on their properties – hardness, solubility, transparency, conductivity.</li> <li>Describe how a material dissolves to form a solution; explaining the process of dissolving.</li> <li>Describe and show how to recover a substance from a solution.</li> <li>Describe how some materials can be separated.</li> <li>Demonstrate how materials can be separated</li> <li>Know and can demonstrate that some changes are reversible and some are not.</li> <li>Explain how some changes result in the formation of a new material and that this is usually irreversible.</li> <li>Discuss reversible and irreversible changes.</li> <li>Give evidenced reasons why materials should be used for specific purposes.</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>Describe and explain the movement of the Earth and other planets relative to the Sun.</li> <li>Describe and explain the movement of the Moon relative to the Earth.</li> <li>Explain and demonstrate how night and day are created.</li> <li>Describe the Sun, Earth and Moon (using the term spherical).</li> </ul>
			<p style="text-align: center;"><b>Forces</b></p>

Working Scientifically	Biology	Physics
<p>To be able to:</p> <ul style="list-style-type: none"> <li>Plan different types of scientific enquiry.</li> <li>Control variables in an enquiry.</li> <li>Measure accurately and precisely using a range of equipment.</li> <li>Record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</li> <li>Use the outcome of test results to make predictions and set up a further comparative fair test.</li> <li>Report findings from enquires in a range of ways.</li> <li>Explain a conclusion from an enquiry.</li> <li>Explain causal relationships in an enquiry.</li> <li>Relate the outcomes from an enquiry to scientific knowledge in order to state whether evidence supports or refutes and argument/ theory.</li> <li>Read, spell and pronounce scientific vocabulary accurately</li> </ul>	<p><b>Living things and their habitats</b></p>	<p><b>Light</b></p>
	<p>To be able to:</p> <ul style="list-style-type: none"> <li>Classify living things into broad groups according to observable characteristics and based on similarities and differences.</li> <li>Describe how living things have been classified.</li> <li>Give reasons for classifying plants and animals in a specific way.</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>Explain how light travels.</li> <li>Explain and demonstrate how we see objects.</li> <li>Explain why shadows have the same shape as the objects that casts them.</li> <li>Explain how simple optical instruments work – periscope, telescope, binoculars, etc.</li> </ul>
	<p><b>Animals, including humans</b></p>	<p><b>Electricity</b></p>
	<p>To be able to:</p> <ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system.</li> <li>Describe the function of the heart, blood vessels and blood.</li> <li>Discuss the impact of diet, exercise, drugs and lifestyle on health.</li> <li>Describe the ways in which nutrients and water are transported in animals/humans.</li> <li>Construct food chains to identify producers, predators and prey</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>Explain how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer.</li> <li>Compare and give reasons for why components work and do not work in a circuit.</li> <li>Draw circuit diagrams using correct symbols.</li> </ul>
	<p><b>Evolution and Inheritance</b></p>	
	<p>To be able to:</p> <ul style="list-style-type: none"> <li>Describe how the earth and living things have changed over time.</li> <li>Explain how fossils can be used to find out about the past.</li> <li>Explain about reproduction and off-spring.</li> <li>Explain how animals and plants are adapted to suit their environment.</li> <li>Link adaptation over time to evolution.</li> <li>Explain evolution.</li> </ul>	