

PROGRESSION OF SCIENCE SKILLS – MERE BROW CE PRIMARY SCHOOL – RECEPTION TO YEAR 6



	RECEPTION	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
<b>QUESTIONING</b>	<p>Ask questions to find out more and to check they understand what has been said to them.</p> <p>Explore the natural world around them.</p>	<p>Ask simple questions stimulated by the world around them.</p> <p>Demonstrate curiosity by the questions they ask.</p>	<p>Raise their own questions based on or linked to things they have observed.</p>	<p>Explore their own ideas about 'what if....?'</p> <p>Begin to understand that some questions can be tested</p>	<p>Choose/select a relevant question that can be answered</p> <p>Ask relevant questions about what they observe and about the world around them.</p>	<p>Raise different kinds of questions</p> <p>Refine a scientific question so that it can be investigated.</p>	<p>Recognise scientific questions that do not yet have definitive answers.</p> <p>Use observations/data gathered to construct a further (testable or research) question.</p>
<b>OBSERVING</b>	<p>Describe what they see, hear and feel whilst outside</p> <p>Explore and talk about different forces they can feel.</p> <p>Describe their immediate environment using knowledge from observation</p>	<p>Observe changes over different periods of time.</p> <p>Observe closely features/properties of things in the real world.</p>	<p>Use their own ideas and their observations to offer answers to questions.</p> <p>Observe and describe simple processes/cycles with several steps</p>	<p>Observe and record relationships between structure and function</p> <p>Observe and record changes /stages over time</p> <p>Use some of the taught scientific language to explain their observations</p>	<p>Suggest their own ideas on a concept and compare these with what they observe / find out.</p> <p>Develop simple descriptions from their observations use relevant scientific language to discuss their ideas.</p> <p>Explore / observe things in the local environment / real contexts and record observations</p>	<p>Use their developing scientific knowledge and understanding and relevant scientific language to discuss, communicate and explain their findings.</p> <p>Explore more abstract systems/functions/ changes and record their understanding of these</p> <p>Observe changes over different periods of time.</p>	<p>Use correct scientific knowledge and understanding and relevant scientific language to explain their findings and justify their scientific ideas.</p> <p>Explore more abstract systems/functions /changes/behaviours and use observation to aid their understanding of these (e.g. friction, air resistance, gravity).</p>

PROGRESSION OF SCIENCE SKILLS – MERE BROW CE PRIMARY SCHOOL – RECEPTION TO YEAR 6



<p><b>IDENTIFYING, COMPARING, GROUPING AND CLASSIFYING</b></p>	<p>Identify some important processes and changes in the natural world around them</p>	<p>Recognise basic features of objects, materials and living things.</p> <p>Identify common features</p> <p>Say how things are similar or different (compare)</p> <p>With help, decide how to sort and group objects, materials or living things</p> <p>Say/identify how different things change objects, materials or living things</p>	<p>Name/identify a variety of common features and/or uses for objects, materials or living things.</p> <p>Compare and contrast a variety of things - including how different things change over different periods of time</p> <p>Sort and classify things according to a variety of different features</p> <p>Decide how to sort and group objects, materials or living things.</p>	<p>Compare and contrast functions, diets, teeth, changes over time.</p> <p>Record similarities and differences.</p> <p>Decide ways and give reasons for sorting, grouping, classifying, identifying things/objects, living things, processes or events based on specific characteristics.</p>	<p>Use guides or simple keys to classify / identify</p> <p>Use their observations to identify and classify.</p> <p>Record similarities, differences or changes related to simple scientific ideas or processes or more complex groups of objects/living things/events and begin to give reasons for these.</p>	<p>Compare and contrast things beyond their locality.</p> <p>Compare more complex processes, systems, functions</p> <p>Suggest reasons for similarities and differences.</p>	<p>Compare and contrast things beyond their locality and analyse advantages/disadvantages of their findings.</p> <p>Compare and contrast more complex processes, systems, functions (e.g. sexual and asexual reproduction).</p>
--	---	--	---	---	--	--	---

PROGRESSION OF SCIENCE SKILLS – MERE BROW CE PRIMARY SCHOOL – RECEPTION TO YEAR 6



<p><b>GATHERING AND RECORDING DATA</b></p>	<p>Explore the natural world around them, making observations and drawing pictures of animals and plants</p>	<p>Observe using non-standard units</p> <p>Observe closely using their senses</p> <p>Present their findings in a range of ways: talk, pictures, photographs and on written templates.</p> <p>Begin to use some simple scientific language.</p>	<p>Observe, and record make drawings to represent things in the real world with some accuracy.</p> <p>Use their senses, simple measurements and equipment to gather data with increasing independence.</p> <p>Present their findings in a range of ways: written, annotated drawings, videos. Use some scientific language in writing.</p>	<p>Collect data from their own observations and measurements, using notes/ simple tables/standard units.</p> <p>Help to make some decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.</p>	<p>Begin to identify where patterns might be found and use this to begin to identify what data to collect.</p> <p>Make more of the decisions about what observations to make, how long to make them for and the type of equipment that might be used.</p>	<p>Record data and results of increasing complexity using tables, bar and line graphs, and models.</p> <p>Report findings from enquiries using a variety of ways</p>	<p>Make decisions on the most appropriate format to present scientific data.</p> <p>Present findings in written form, displays and other presentations</p>
--	--	--	--	---	---	--	--

PROGRESSION OF SCIENCE SKILLS – MERE BROW CE PRIMARY SCHOOL – RECEPTION TO YEAR 6



<p><b>RESULTS AND CONCLUDING</b></p> <p><i>*all years will be expected to use the specific scientific terminology to help them explain their understanding see yearly knowledge organisers</i></p>	<p>Talk about the differences between materials and changes they notice.</p>	<p>Sequence photographs of an event/observation.</p> <p>Talk/ discuss/ describe about what they have seen/ what has happened.</p> <p>Use their observations and ideas to suggest answers to questions.</p>	<p>Order their findings.</p> <p>with guidance, begin to notice patterns and relationships.</p> <p>Recognise if results matched predictions.</p> <p>Record with some accuracy what they have seen/ what has happened.</p> <p>Begin to explain how they know...use the word because</p> <p>Use their results and their own experience to answer their questions.</p>	<p>Describe and compare the effect of different factors on something.</p> <p>With help, look for changes and patterns in their observations and data and notice any odd results.</p> <p>Use their results to consider whether they meet predictions.</p> <p>Use their own experience and some evidence or results to draw simple conclusions and answer questions.</p> <p>Begin to recognise when a test is not fair and suggest improvements.</p>	<p>Notice/find patterns in their observations and data.</p> <p>Describe the effect of different factors on something else.</p> <p>Help to make decisions about how to analyse their data.</p> <p>Begin to develop their ideas about relationships and interactions.</p> <p>With support identify the scientific facts in their data</p> <p>Use results to suggest improvements, new questions and predictions for setting up further tests.</p>	<p>Look for patterns and notice relationships between things and describe these</p> <p>Draw conclusions based on their data and observations.</p> <p>Use test results to make predictions to set up further comparative and fair tests.</p> <p>Comment on how reliable their data is.</p>	<p>Look for different causal relationships in their data and describe the pattern</p> <p>Identify patterns that might be found in the natural environment over long periods of time and describe how these have been used to develop scientific theories (e.g. evolution).</p> <p>Identify evidence that refutes or supports their ideas</p> <p>Use their evidence to justify their ideas.</p> <p>Recognise the limitations of some data and identify when further tests and observations might be needed.</p> <p>Be able to explain differences in repeated measurements/readings or unexpected results</p>
--	--	--	--	--	---	---	--

PROGRESSION OF SCIENCE SKILLS – MERE BROW CE PRIMARY SCHOOL – RECEPTION TO YEAR 6



<p><b>EQUIPMENT AND MEASURING</b></p> <p><i>All children will be expected to understand precautions for working safely with the equipment they have been given</i></p>	<p>Explore some scientific equipment</p> <p>Equipment: iPads</p>	<p>Observe closely, using simple equipment</p> <p>Equipment: As previous years Magnifying glasses Egg timers</p>	<p>Collect some data using simple equipment</p> <p>Equipment: As previous years Timers Measuring cylinders Tape measures Scales rulers</p>	<p>Make simple accurate measurements using whole number standard units</p> <p>Equipment: As previous years Data loggers Thermometers microscopes</p>	<p>Make accurate measurements using standard units [and more complex units and parts of units] using a range of equipment.</p> <p>Equipment: As previous years Sound level meters</p>	<p>Choose the most appropriate equipment to make measurements.</p> <p>Explain how to use equipment accurately.</p> <p>Equipment: As previous years Force gauge meters</p>	<p>Take measurements, using a range of equipment, with increasing accuracy and precision.</p> <p>Choose and use the most appropriate equipment</p> <p>Equipment: As previous years</p>
<p><b>RESEARCH</b></p>	<p>Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class.</p> <p>Understand the past through settings, characters and events encountered in books read in class and storytelling.</p>	<p>Find out about the work of famous scientists</p> <p>Ask people questions</p>	<p>Find out about the work of famous scientists</p> <p>Use simple and appropriate secondary sources to find things out</p>	<p>Find out about the work of famous scientists historical and modern day</p> <p>Finding things out using secondary sources of information</p>	<p>Create/invent/design something based on what they have found out applying both research and/or practical experiences</p>	<p>Research the work of famous scientists (historical and modern day) and use this to find out how scientific ideas have changed over time.</p>	<p>Find things out using a wide range of secondary sources of information.</p>

PROGRESSION OF SCIENCE SKILLS – MERE BROW CE PRIMARY SCHOOL – RECEPTION TO YEAR 6



<p><b>PLANNING</b></p> <p><i>All children will access a variety of scientific enquiry methods including:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Observation</i></li> <li>▪ <i>Comparative</i></li> <li>▪ <i>Fair testing</i></li> <li>▪ <i>Identifying and classification</i></li> <li>▪ <i>Pattern seeking</i></li> <li>▪ <i>researching</i></li> </ul>	<p>Explore how things work.</p>	<p>Talk about ways of answering their questions.</p> <p>Perform simple tests</p>	<p>Set up a comparative test.</p> <p>Suggest a way to find answers to their questions</p>	<p>Help to decide about how to set up a simple fair test and begin to recognise when a test is not fair.</p> <p>Begin to make some decisions about the best way of answering their questions.</p> <p>Set up simple practical enquiries incl. comparative and fair tests e.g. make a choice from a list of at least one variable that needs to be kept the same when conducting a fair test.</p>	<p>Investigate the effect of something on something else.</p> <p>Start to make their own decisions about the most appropriate type of science enquiry they might use to answer scientific questions [is a fair test the best way to investigate their question].</p> <p>Recognise when a test is necessary.</p> <p>Carry out simple fair tests [with increasing confidence and make some of the planning decisions about what to change and measure/observe].</p>	<p>Explain which variables need to be controlled and why.</p> <p>Make most of the planning decisions about] and carry out fair tests.</p> <p>Recognise when it is appropriate to carry out a fair test and plan how to set it up.</p>	<p>Plan enquiries, including recognising and controlling variables where necessary.</p> <p>Select and plan the most appropriate type of science enquiry to use to answer scientific questions.</p>
---	---------------------------------	--	---	---	---	---	--