



RADDLEBARN PRIMARY SCHOOL PROGRESSION OF 'WORKING SCIENTIFICALLY' SKILLS IN SCIENCE



5 types of scientific enquiry: Observing changes over time, Pattern seeking, Grouping and classifying, Comparative and fair testing, Research.

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Developing the skill of...	Confidently...	Developing the skill of...	Confidently...	Developing the skill of...	Confidently...
<p>PLAN Ask questions, make predictions, decide on the method and equipment</p>	<p>Develop this skill: Listen attentively and respond to what they hear with relevant questions</p>	<p>Listen attentively and respond to what they hear with relevant questions</p>	<p>Asking simple questions and recognising that they can be answered in different ways</p>	<p>Asking simple questions and recognising that they can be answered in different ways</p>	<p>Asking relevant questions and using different types of scientific enquiries to answer them (begin to decide on most appropriate type of scientific enquiry)</p> <p>Setting up simple practical enquiries, comparative and fair tests (explain why the test is fair, using language of variables)</p>	<p>Asking relevant questions and using different types of scientific enquiries to answer them (begin to decide on most appropriate type of scientific enquiry)</p> <p>Setting up simple practical enquiries, comparative and fair tests (explain why the test is fair, using language of variables)</p>	<p>Planning different types of scientific enquiries to answer questions.</p> <p>Recognising and controlling variables where necessary (select most appropriate type of enquiry, use and understand the language of independent, dependant and control variables)</p>	<p>Planning different types of scientific enquiries to answer questions.</p> <p>Recognising and controlling variables where necessary (select most appropriate type of enquiry, use and understand the language of independent, dependant and control variables)</p>
<p>DO Carry out an enquiry using equipment</p> <p>Measuring (linking to Maths progression)</p>	<p>Develop this skill: Show an ability to follow instructions involving several ideas or actions</p> <ul style="list-style-type: none"> • be confident to try new activities... • use a range of small tools... • safely use and explore a variety of materials, tools and techniques 	<p>Show an ability to follow instructions involving several ideas or actions</p> <ul style="list-style-type: none"> • be confident to try new activities... • use a range of small tools... • safely use and explore a variety of materials, tools and techniques 	<p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Measure using non-standard units of measure. (ruler / cubes / thermometer / hands / egg timers)</p>	<p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Measure using standard units where all the numbers are marked on the scale.</p> <p>length (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml)</p> <p>Rulers / measuring cylinders / thermometers / scales</p>	<p>Making systematic and careful observations</p> <p>Taking accurate measurements using standard units, using a range of equipment, (including thermometers and data loggers) (help to make decisions on which equipment to use)</p> <p>Measure using standard units where not all the numbers are marked on the scale, and beginning to take repeat readings.</p> <p>length (m/cm/mm); mass (kg/g); temperature (°C); capacity (litres/ml); time (min, sec)</p> <p>Data loggers / rulers / measuring cylinders and jugs / thermometers / scales</p>	<p>Making systematic and careful observations</p> <p>Taking accurate measurements using standard units, using a range of equipment, (including thermometers and data loggers) (help to make decisions on which equipment to use)</p> <p>Measure using standard units where not all the numbers are marked on the scale, and take repeat readings where necessary.</p> <p>length (m/cm/mm); mass (kg/g); temperature (°C); capacity (litres/ml); time (min, sec)</p> <p>Data loggers / thermometers / measuring cylinders and jugs / scales / stop watches / tape measure</p>	<p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision</p> <p>Taking repeat readings when appropriate (make own decisions regarding all above)</p> <p>Measure using standard units using equipment that has scales, involving decimals.</p> <p>length (m/cm/mm); mass (kg/g); temperature (°C, incl negative nمبر); capacity (litres/ml); time (min, sec, ms)</p> <p>Newton meters / data loggers / thermometers / measuring jugs and cylinders / scales / stop watches / tape measure</p>	<p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision</p> <p>Taking repeat readings when appropriate (make own decisions regarding all above)</p> <p>Measure using standard units using equipment that has scales, involving decimals.</p> <p>length (m/cm/mm) mass (kg/g); temperature (°C, incl negative nمبر); capacity (litres/ml) ; time (min, sec, ms)</p> <p>Data loggers / thermometers / measuring jugs / scales / stop watches / tape measure</p>

<p>RECORD Use drawings, tables or graphs to note observations and measurement</p> <p>(Linking to Statistics progression)</p>	<p>Develop this skill: Explore the natural world around them, making observations and drawing pictures of animals and plants</p>	<p>Explore the natural world around them, making observations and drawing pictures of animals and plants</p>	<p>Gathering and recording data to help in answering questions Use text, simple labelled diagrams, pictures, photographs, simple prepared tables to record their observations</p> <p>Basic classification – grouping and matching</p>	<p>Gathering and recording data to help in answering questions Use text, block diagrams, simple labelled diagrams, pictograms, pictures, photographs, tally charts, simple tables to record their observations</p>	<p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions (help to make decisions on what data to collect and why)</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Prepare own tables, use pictograms, tally charts, basic Venn and Carroll diagrams with prepared headings.</p>	<p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions (help to make decisions on what data to collect and why)</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Prepare own tables, use pictograms, basic Venn and Carroll diagrams, and line graphs. Use pre-made classification keys to identify and classify</p>	<p>Recording data and results of increasing complexity (using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs) Choose the appropriate form of presentation.</p> <p>Prepare own tables to record data, including columns for taking repeat readings</p> <p>Classification keys – beginning to make their own keys, some headings may be given Use Venn and Carroll diagrams</p>	<p>Recording data and results of increasing complexity (using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs) Choose the appropriate form of presentation.</p> <p>Prepare own tables to record data, including columns for taking repeat readings</p> <p>Classification keys – making their own keys. Use Venn and Carroll diagrams</p>
<p>REVIEW Interpret, communicate and evaluate results</p>	<p>Develop this skill: participate in discussions, offering their own ideas, using recently introduced vocabulary</p> <ul style="list-style-type: none"> offer explanations for why things might happen... express their ideas and feelings about their experiences know some similarities and differences... drawing on their experience 	<p>participate in discussions, offering their own ideas, using recently introduced vocabulary</p> <ul style="list-style-type: none"> offer explanations for why things might happen... express their ideas and feelings about their experiences know some similarities and differences... drawing on their experience 	<p>Using their observations and ideas to suggest answers to questions</p>	<p>Using their observations and ideas to suggest answers to questions</p>	<p>Reporting on findings from enquiries (including oral and written explanations, displays or presentations of results and conclusions)</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p> <p>Using straightforward scientific evidence to answer questions or to support their findings</p>	<p>Reporting on findings from enquiries (including oral and written explanations, displays or presentations of results and conclusions)</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p> <p>Using straightforward scientific evidence to answer questions or to support their findings</p>	<p>Using test results to make predictions to set up further comparative and fair tests (decide if / when further tests are needed based on results)</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships</p> <p>Give explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments (discuss how scientific arguments have developed over time)</p>	<p>Using test results to make predictions to set up further comparative and fair tests (decide if / when further tests are needed based on results)</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships</p> <p>Give explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments (discuss how scientific arguments have developed over time)</p>