

Working Scientifically Skills Progression Overview

Skill		Year Group					
		Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Ideas and questions		Ask simple questions and recognise that they can be answered in different ways (<i>Everyday Materials, Plants</i>)	Ask simple questions and recognise that they can be answered in different ways (<i>Living Things & their Habitats</i>) Recognise scientific and technical developments that help us (<i>Uses of Everyday Materials</i>)	Ask relevant questions and uses different types of scientific enquiries to answer them (<i>Animals including Humans, Light, Rocks</i>)	Ask relevant questions and uses different types of scientific enquiries to answer them (<i>Electricity, Living Things & their Habitats, Sound</i>) Explain the purposes of a variety of scientific and technological developments (<i>Electricity</i>)	Uses their scientific experiences to explore ideas and raise different types of questions (<i>Forces, Properties and Changes of Materials, Living Things & their Habitats</i>) Talks about how scientific ideas have developed over time recognises the applications of specific scientific ideas (<i>Forces, Properties and Changes of Materials, Living Things & their Habitats</i>) Recognise the applications of specific scientific ideas (<i>Properties and Changes of Materials</i>)	Use their scientific experiences to explore ideas and raise different types of questions (<i>Animals including Humans, Evolution & Inheritance</i>) Talk about how scientific ideas have developed over time (<i>Animals including Humans, Evolution & Inheritance</i>) Recognise the applications of specific scientific ideas (<i>Animals including Humans, Evolution & Inheritance</i>)
Planning	Planning an approach	Perform simple tests or follow teachers' instructions (<i>Everyday Materials</i>)	Perform simple tests (<i>Plants</i>) With guidance, suggest what they will do (<i>Plants</i>) With guidance, identify things to measure or observe that are relevant to the question (<i>Plants</i>)	Set up simple practical enquiries, comparative and fair tests (<i>Forces and Magnets, Plants</i>) Begin to choose the type of simple equipment that might be used from a reasonable range (<i>Forces and Magnets, Plants</i>)	Set up simple practical enquiries, comparative and fair tests (<i>Electricity, States of Matter</i>) Begin to choose the type of simple equipment that might be used from a reasonable range (<i>States of Matter</i>)	Select and plan different types of scientific enquiries to answer questions (<i>Forces, Properties and Changes of Materials, Living Things & their Habitat</i>) Make decisions about what observations to make, what measurements to use, how long to make them for and whether to repeat them (<i>Forces, Living Things & their Habitat</i>)	Select and plan different types of scientific enquiries to answer questions (<i>Electricity</i>)
	Equipment	Use simple measurements and equipment to gather data (<i>Plants</i>)	Use resources provided or chosen from a limited range (<i>Plants</i>) Use simple measurements or equipment to gather data (<i>Plants</i>)	Begin to choose the type of simple equipment that might be used from a reasonable range (<i>Forces and Magnets, Plants, Rocks</i>)	Begin to choose the type of simple equipment that might be used from a reasonable range (<i>Electricity</i>) Use appropriate equipment and measurements with reasonable accuracy (<i>States of Matter</i>)	Choose the most appropriate equipment to make measurements (<i>Forces</i>) Explain how to use the equipment accurately (<i>Forces</i>)	Choose the most appropriate equipment to make measurements (<i>Light</i>) Explain how to use the equipment accurately (<i>Electricity, Light</i>)
	Variables		Suggest why a test is unfair (<i>Plants</i>)	Recognise when a simple fair test is needed (<i>Plants</i>) With help, decide how to set up a fair test and control variables (<i>Plants</i>)	Decide how to set up a fair test and control variables (<i>Electricity</i>)	Recognise when and how to set up comparative and fair tests (<i>Properties and Changes of Materials, Living Things & their Habitats</i>)	Recognises when and how to set up comparative and fair tests (<i>Electricity</i>) Recognises and control variables where necessary (e.g. explains which variables need to be controlled and why) (<i>Electricity</i>)

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Obtaining and presenting evidence	Observing and measuring	Observe closely (including changes over time), using simple equipment <i>(Plants, Seasonal Changes)</i>	Observe closely (including changes over time), using simple equipment <i>(Living Things & their Habitat, Plants, Uses of Everyday Materials)</i> Make measurements using non-standard units <i>(Plants)</i>	Make systematic and careful observations <i>(Animals including Humas, Forces and Magnets, Plants, Rocks)</i> Make accurate measurements using standard units (e.g. cm, m, °C, N, g, Kg, ml), using a range of equipment, e.g. data loggers and thermometers <i>(Forces and Magnets, Plants)</i>	Make systematic and careful observations <i>(Animals including Humans, Electricity)</i> Make accurate measurements using standard units (e.g. cm, m, °C, N, g, Kg, ml), using a range of equipment, e.g. data loggers and thermometers <i>(States of Matter)</i>	Take measurements , in standard units, using a range of scientific equipment, with increasing accuracy and precision <i>(Living Things & their Habitats)</i> Take repeat readings when appropriate <i>(Properties and Changes of Materials)</i>	Take measurements , in standard units, using a range of scientific equipment, with increasing accuracy and precision <i>(Light)</i>
	Secondary sources	Uses simple secondary sources to find answers <i>(Animals including Humans)</i>	Use simple secondary sources to find answers, e.g. books, videos, photographs or people <i>(Animals including Humans)</i>	Recognise when and how secondary sources (e.g. books, internet, experts, diagrams) might help answer questions that cannot be answered through practical investigations <i>(Animals including Humans, Rocks)</i>	Recognise when and how secondary sources (e.g. books, internet, experts, diagrams) might help answer questions that cannot be answered through practical investigations <i>(Living Things & their Habitat)</i>	Recognise which secondary sources will be most useful to research their ideas <i>(Animals including Humans, Earth and Space, Living Things & their Habitat)</i> Begin to separate opinion from fact <i>(Animals including Humans, Earth and Space, Living Things & their Habitats)</i>	Recognise which secondary sources will be most useful to research their ideas <i>(Animals including Humans, Evolution & Inheritance, Living Things & their Habitats)</i> Begin to separate opinion from fact <i>(Animals including Humans, Evolution & Inheritance, Living Things & their Habitats)</i>
	Recording information and data	Gather and record simple data to help in answering questions <i>(Everyday Materials, Plants, Seasonal Changes)</i> With support, prepare simple tables to record data <i>(Seasonal Changes)</i>	Gather and record simple data to help in answering questions <i>(Plants, Uses of Everyday Materials)</i> With support, prepare simple tables to record data <i>(Plants, Uses of Everyday Materials)</i>	Gather and record data in a variety of ways to help in answering questions <i>(Plants)</i> Make decisions about how to record and analyse the data <i>(Plants)</i>	Gather and record data in a variety of ways to help in answering questions <i>(States of Matter)</i> Prepare own format for recording data <i>(States of Matter)</i> Make decisions about how to record and analyse the data <i>(States of Matter)</i>	Record data and results of increasing complexity <i>(Forces, Properties and Changes of Materials)</i> Decide how to record data from a choice of familiar approaches <i>(Forces, Properties and Changes of Materials)</i> Calculate mean value where appropriate <i>(Forces)</i>	Record data and results of increasing complexity <i>(Electricity)</i>
	Presenting evidence	Talk about their findings using everyday terms, text scaffolds or simple scientific language <i>(Everyday Materials)</i>	With help, record their finding in a range of ways, e.g. simple tables, diagrams, pictograms, sorting circles, bar charts and templates <i>(Living Things & their Habitat)</i> Talk about their finding using everyday terms, text scaffolds or simple scientific language <i>(Plants)</i>	Record and presents findings using drawings, labelled diagrams, keys, tally charts, Carroll diagrams, Venn diagrams, bar charts and tables <i>(Plants)</i>	Record and presents findings using drawings, labelled diagrams, keys, tally charts, Carroll diagrams, Venn diagrams, bar charts and tables <i>(States of Matter)</i> Report on findings from enquiries, in simple scientific language, using oral and written explanations, displays or presentations of results and conclusions <i>(States of Matter)</i>	Report on findings from enquiries , using relevant scientific language and conventions, in oral and written explanations such as displays and other presentations <i>(Properties and Changes of Materials, Earth and Space)</i>	Record and present findings using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs <i>(Animals including Humans, Evolution & Inheritance, Living Things & their Habitats)</i> Report on findings from enquiries , using relevant scientific language and conventions, in oral and written explanations such as displays and other presentations <i>(Animals including Humans, Electricity, Evolution & Inheritance)</i>

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Considering and evaluating evidence	Looking for patterns	<p>Use simple observable features to compare materials <i>(Everyday Materials)</i></p> <p>Use simple observable features to compare living things <i>(Animals including Humans)</i></p> <p>Identify and classify (decide how to sort and group objects) <i>(Animals including Humans, Plants)</i></p>	<p>Use simple observable features to compare object, materials and living things <i>(Living Things & their Habitat, Uses of Everyday Materials)</i></p> <p>Identify and classify (decide how to sort and group objects) <i>(Living Things & their Habitat, Uses of Everyday Materials, Animals including Humans)</i></p> <p>With guidance, begin to notice changes (i.e. cause and effect), patterns and relationships (i.e. how one variable affects another) <i>(Living Things & their Habitat, Plants, Uses of Everyday Materials)</i></p>	<p>Use observable and other criteria to group, sort and classify in different ways (including simple keys and branching databases) <i>(Animals including Humas, Forces and Magnets, Plants)</i></p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes <i>(Animals including Humans, Light, Plants, Rocks)</i></p> <p>With help, look for changes, patterns, and relationships in their data <i>(Forces and Magnets, Light, Plants)</i></p>	<p>Use observable and other criteria to group, sort and classify in different ways (including simple keys and branching databases) <i>(Living Things & their Habitats, Sound, States of Matter)</i></p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes <i>(Electricity, Sound)</i></p> <p>Look for changes, patterns, and relationships in their data <i>(Living Things & their Habitats)</i></p>	<p>Use and develop keys and other information records to identify, classify and describe materials <i>(Forces, Properties and Changes of Materials)</i></p> <p>Use and develop keys and other information records to identify, classify and describe living things <i>(Animals including Humans)</i></p> <p>Identifies conclusions, causal relationships and patterns (Properties and Changes of Materials, Animals including Humans)</p>	<p>Use and develop keys and other information records to identify, classify and describe materials <i>(Evolution & Inheritance, Living Things & their Habitats)</i></p> <p>Identify conclusions, causal relationships and patterns (Electricity, Evolution & Inheritance, Living Things & their Habitats)</p>
	Explaining results	<p>Talk about what they have found out and how they have found it out <i>(Seasonal Changes)</i></p>	<p>Use comparative language to describe changes, patterns and relationships (LT&H)</p> <p>Talk about what they have found out and how they found it out (P, EM)</p> <p>Use their observations and ideas to suggest answers to questions (P)</p>	<p>With help, use results to draw simple conclusions and answers questions using appropriate level of knowledge <i>(Plants)</i></p> <p>Use straightforward scientific evidence to answer questions or to support their findings <i>(Forces and Magnets, Plants)</i></p> <p>Use relevant scientific language to discuss their ideas and communicate their findings <i>(Plants)</i></p>	<p>Use relevant scientific language to discuss their ideas <i>(Animals including Humans, States of Matter)</i></p> <p>Use relevant scientific language to discuss their ideas and communicate their findings <i>(States of Matter)</i></p>	<p>Draw valid conclusions, explains and interprets the results (including the degree of trust) using scientific knowledge and understanding (e.g. recognises limitations of data) <i>(Earth & Space, Living Things & their Habitats)</i></p> <p>Identify scientific evidence that has been used to support or refute ideas or arguments (Forces, Earth & Space)</p> <p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas <i>(Forces)</i></p>	<p>Draw valid conclusions, explains and interprets the results (including the degree of trust) using scientific knowledge and understanding (e.g. recognises limitations of data) <i>(Electricity)</i></p> <p>Identify scientific evidence that has been used to support or refute ideas or arguments (Electricity, Living Things & their Habitats)</p> <p>Uses relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas <i>(Electricity, Living Things & their Habitats)</i></p>
	Evaluating		<p>With support, suggest whether or not what happened was what they expected (P)</p> <p>With support, suggest different ways they could have done things (P)</p>	<p>With support, raise further questions (e.g. arising from the data) <i>(Plants)</i></p> <p>With support, make predictions for new values within or beyond the data collected <i>(Forces and Magnets, Plants)</i></p>	<p>Use results to suggest improvements to what they have done <i>(Electricity)</i></p> <p>With support, make predictions for new values within or beyond the data collected <i>(States of Matter)</i></p>	<p>Makes practical suggestions about how their working method could be improved (e.g. the effect of sample size on reliability) <i>(Living Things & their Habitats)</i></p> <p>Use results to identify when further tests and observations might be needed <i>(Living Things & their Habitats)</i></p> <p>Use test results to make predictions and to set up further comparative and fair tests (Living Things & their Habitats)</p>	<p>Make practical suggestions about how their working method could be improved (e.g. the effect of sample size on reliability) <i>(Electricity, Light)</i></p>