

West Hill Primary School

Science Progression

West Hill Curriculum Aims:

The core values that underpin our curriculum are:

- opportunity
- relevant
- independence
- resilience

The West Hill Curriculum aims to...

- develop core skills that enable children to build strong foundations rooted deeply in a clear and concise focus on reading, writing, maths and emotional literacy;
- offer a creative approach to learning which develops a love of learning and encourages all children to have enquiring minds and become independent and collaborative learners;
- promote pupils' spiritual, moral, social, emotional and cultural development through a broad and balanced curriculum which provides support and challenge;
- encourage children to become responsible citizens who can make a positive contribution to society and show care, consideration and respect for difference of race, creed, culture and gender.

	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Working Scientifically	<p>Be able to explore the natural world around them, making observations and drawing pictures of animals and plants.</p> <p>Be able to know some similarities and differences between the natural world around them</p>	<p>To use the following practical scientific methods, processes and skills (adult support may be needed).</p> <p>eg: Observe, name, sort, begin to make simple predictions, talk about, describe, explain.</p>	<p>To use the following practical scientific methods, processes and skills (with increasing confidence).</p> <p>eg, explore, match up, organise, identify, become more confident making simple predictions, describe, explain, research, investigate.</p>	<p>To use the following practical scientific methods, processes and skills.</p> <p>eg, explore, identify, investigate, gather, record and classify information, begin to use different types of scientific enquiry, begin to ask relevant questions, report on findings, begin to use reports to draw conclusions.</p>	<p>To use the following practical scientific methods, processes and skills.</p> <p>eg, ask relevant questions, use a variety of different scientific enquiry, set up simple enquiries, make systematic observations, make accurate measurements, gather, record, classify and present data, report on findings from enquiries, use results to draw simple</p>	<p>To use the following practical scientific methods, processes and skills.</p> <p>eg, plan a variety of scientific enquiry, control variables where necessary</p> <p>eg in a fair test; take measurements with increasing accuracy using scientific equipment; record data and results in tables, labels, diagrams, classification keys, scatter, bar and line</p>	<p>To use the following practical scientific methods, processes and skills.</p> <p>eg, plan a variety of scientific enquiry; control variables where necessary</p> <p>eg in a fair test; take measurements with increasing accuracy using scientific equipment; record data and results with increasing complexity in tables, labels, diagrams, classification keys,</p>

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	<p>and contrasting environments, drawing on their experiences and what has been read in class.</p> <p>Be able to understand some</p>				<p>conclusions, make further predictions for new values, use straightforward scientific evidence to support their ideas or findings</p>	<p>graphs; present conclusions and explanations in a variety of ways; compare and describe findings in investigations.</p>	<p>scatter, bar and line graphs; identify scientific evidence that has been used to support or refute an idea; identify, describe and give reasons for or against within a topic; present conclusions and explanations in a variety of ways</p>
Questioning and enquiring Planning	<p>important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>	<p>Ask simple questions about the world around us</p> <p>Begin to recognise that they can be answered in different ways (different types of enquiry including - observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative tests, finding things out from secondary sources).</p>	<p>Ask questions about the world around us.</p> <p>Recognise that they can be answered in different ways (different types of enquiry including – observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative tests, finding things out from secondary sources).</p>	<p>Ask some relevant questions and use different types of scientific enquiries to answer them.</p> <p>Begin to explore everyday phenomena and the relationships between living things and familiar environments.</p> <p>Begin to develop their ideas about functions, relationships and interactions.</p> <p>Begin to raise their own questions about the world around them.</p>	<p>Ask relevant questions and use different types of scientific enquiries to answer them.</p> <p>Explore everyday phenomena and the relationships between living things and familiar environments.</p> <p>Begin to develop their ideas about functions, relationships and interactions.</p> <p>Raise their own questions about the world around them.</p>	<p>Begin to plan different types of scientific enquiries to answer questions, including recognizing and controlling variables where necessary.</p> <p>Begin to explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically.</p> <p>Begin to recognise some more abstract ideas and begin to recognise how these</p>	<p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> <p>Explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically.</p> <p>Begin to recognise more abstract ideas and begin to recognise how these ideas help them to</p>

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				Begin to make some decisions about which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative and fair tests, finding things out using secondary sources.	Make some decisions about which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative and fair tests, finding things out using secondary sources.	ideas help them to understand how the world operates. Begin to recognise scientific ideas change and develop over time. Begin to select the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.)	understand how the world operates. Begin to recognise scientific ideas change and develop over time. Select the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.)
Observing and Measuring. Pattern seeking		Begin to observe closely, using simple equipment. Use simple observations and ideas to suggest	Observe closely, using simple equipment. Use observations and ideas to suggest answers to questions.	Begin to make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of	Begin to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.

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		<p>answers to questions.</p> <p>To observe simple changes over time and, with guidance, begin to notice patterns and relationships.</p> <p>To say what I am looking for and what I am measuring.</p> <p>To know how to use simple equipment safely.</p> <p>Use simple measurements and equipment with support (eg hand lenses and egg timers)</p> <p>Begin to progress from non-standard units, reading cm, m, cl, l, °C.</p>	<p>To observe changes over time and, with guidance begin, to notice patterns and relationships.</p> <p>To say what I am looking for and what I am measuring.</p> <p>To know how to use simple equipment safely.</p> <p>Use simple measurements and equipment with increasing independence (eg hand lenses and egg timers)</p> <p>Begin to progress from non-standard units, reading mm, cm, m, ml, l, °C</p>	<p>a range of equipment, including thermometers and data loggers.</p> <p>Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them.</p> <p>Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.</p> <p>Learn to use some new equipment appropriately (eg data loggers).</p> <p>Begin to see a pattern in my results.</p> <p>Begin to choose from a selection of equipment.</p> <p>Begin to observe and measure accurately</p>	<p>equipment, including thermometers and data loggers.</p> <p>Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them.</p> <p>Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.</p> <p>Learn to use new equipment appropriately (eg data loggers).</p>	<p>Begin to identify patterns that might be found in the natural environment.</p> <p>Begin to make their own decisions about what observations to make, what measurements to use and how long to make them for and whether to repeat them.</p> <p>Choose the most appropriate equipment and explain how to use it accurately.</p> <p>Begin to interpret data and find patterns.</p> <p>Select equipment on my own.</p> <p>To make a set of observations and say what the interval and range are.</p> <p>Begin to take accurate and precise measurements – N,</p>	<p>Identify patterns that might be found in the natural environment.</p> <p>Make their own decisions about what observations to make, what measurements to use and how long to make them for and whether to repeat them.</p> <p>Choose the most appropriate equipment and explain how to use it accurately.</p> <p>To interpret data and find patterns Select equipment on my own.</p> <p>To make a set of observations and say what the interval and range are.</p> <p>Accurate and precise measurements – N, g, kg, mm, cm, mins, seconds, cm²V,</p>
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				using standard units including time in minutes and seconds.		g, kg, mm, cm, mins, seconds, cm ² V, km/h, m per sec, m/sec Graphs – pie, line	km/h, m per sec, m/sec Graphs – pie, line, bar (Year 6)
Investigating		Perform simple tests with support. To begin to discuss my ideas about how to find things out. To begin to say what happened in my investigation.	Perform simple tests. To discuss my ideas about how to find things out. To say what happened in my investigation.	Set up some simple practical enquiries, comparative and fair tests. Begin to recognise when a simple fair test is necessary and help to decide how to set it up. Begin to think of more than one variable factor	Set up simple practical enquiries, comparative and fair tests. Recognise when a simple fair test is necessary and help to decide how to set it up. Can think of more than one variable factor	Begin to use test results to make predictions to set up further comparative and fair tests. Begin to recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. Begin to suggest improvements to my method and give reasons. Begin to decide when it is appropriate to do a fair test	Use test results to make predictions to set up further comparative and fair tests. Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. Suggest improvements to my method and give reasons. Decide when it is appropriate to do a fair test.
Recording and reporting findings		Gather and record data with some adult support, to help in answering questions Begin to record simple data.	Gather and record data to help in answering questions. Record simple data.	Gather, record, and begin to classify and present data in a variety of ways to help in answering questions.	Gather, record, classify and present data in a variety of ways to help in answering questions.	Begin to record data and results of increasing complexity using scientific diagrams and labels, classification keys,	Record data and results of increasing complexity using scientific diagrams and labels, classification keys,

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		<p>Begin to record and communicate findings in a range of ways.</p> <p>Show results in a simple table that my teacher has provided</p>	<p>Record and communicate findings in a range of ways.</p> <p>Show results in a table that my teacher has provided</p>	<p>Begin to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p> <p>Begin to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Begin to use notes, simple tables and standard units and help to decide how to record and analyse their data.</p> <p>Begin to record results in tables and bar charts.</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 notes, simple tables and standard units and help to decide how to record and analyse their data.</p> <p>Record results in tables and bar charts.</p>	<p>tables and bar and line graphs.</p> <p>Begin to report and present findings from enquiries.</p> <p>Begin to decide how to record data from a choice of familiar approaches.</p> <p>Begin to choose how best to present data.</p>	<p>tables and bar and line graphs.</p> <p>Report and present findings from enquiries.</p> <p>Decide how to record data from a choice of familiar approaches.</p> <p>Can choose how best to present data</p>
Identifying, grouping and classifying		<p>Identify and classify with some support.</p> <p>To begin to observe and identify, compare and describe.</p>	<p>Identify and classify.</p> <p>Observe and identify, compare and describe.</p> <p>Use simple features to compare objects, materials and living</p>	<p>Begin to identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Begin to talk about criteria for grouping,</p>	<p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Talk about criteria for grouping, sorting</p>	<p>Begin to use and develop keys and other information records to identify, classify and describe living things and materials</p>	<p>Use and develop keys and other information records to identify, classify and describe living things and materials.</p>

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		To begin to use simple features to compare objects, materials and living things and, with help, decide how to sort and group them.	things and, with help, decide how to sort and group them.	sorting and classifying and use simple keys. Begin to compare and group according to behaviour or properties, based on testing.	and classifying and use simple keys. Compare and group according to behaviour or properties, based on testing		
Research		Begin to use simple secondary sources to find answers. To begin to find information to help me from books and computers with help.	Use simple secondary sources to find answers. Can find information to help me from books and computers with help.	Begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.	Begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.	Begin to recognise which secondary sources will be most useful to research their ideas	Recognise which secondary sources will be most useful to research ideas.
Conclusions		Begin to talk about what they have found out and how they found it out Begin to say what happened in an investigation. To begin to say whether surprised at the results or not. To begin to say what I would change about my investigation.	Talk about what they have found out and how they found it out. To say what happened in the investigation. To say whether I was surprised at the results or not. To say what I would change about my investigation	Begin to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Begin to use straightforward scientific evidence to answer questions or to support their findings. With help, begin to look for changes,	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Use straightforward scientific evidence to answer questions or to support their findings. With help, look for changes, patterns, similarities and	Begin to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Start to identify scientific evidence that has been used to support or refute ideas or arguments.	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identify scientific evidence that has been used to support or refute ideas or arguments.

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				<p>patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.</p> <p>With support, begin to identify new questions arising from the data, make new predictions and find ways of improving what they have already done.</p> <p>Begin a pattern in my results.</p> <p>Begin to say what I found out, linking cause and effect.</p> <p>Begin to say how I could make it better.</p> <p>Begin to raise questions from what I have found out.</p>	<p>differences in their data in order to draw simple conclusions and answer questions.</p> <p>With support, identify new questions arising from the data, make new predictions and find ways of improving what they have already done.</p>	<p>Begin to draw conclusions based on data and observations, use evidence to justify ideas, use scientific knowledge and understanding to explain findings.</p> <p>Begin to use test results to make predictions to set up further comparatives and fair tests.</p> <p>Begin to look for different causal relationships in their data and identify evidence that refutes or supports ideas.</p> <p>Use their results to identify when further tests and observations are needed.</p> <p>Begin to separate opinion from fact.</p> <p>Begin to draw conclusions and identify scientific evidence.</p>	<p>Draw conclusions based on data and observations, use evidence to justify ideas, use scientific knowledge and understanding to explain findings.</p> <p>Use test results to make predictions to set up further comparatives and fair tests.</p> <p>Look for different causal relationships in their data and identify evidence that refutes or supports ideas.</p> <p>Use their results to identify when further tests and observations are needed.</p> <p>Separate opinion from fact.</p> <p>Can draw conclusions and identify scientific evidence.</p>
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						Can use simple models. Know which evidence proves a scientific point. Begin to use test results to make predictions to set up further comparative and fair tests	Can use simple models. Know which evidence proves a scientific point. Use test results to make predictions to set up further comparative and fair tests.
Vocabulary		Use some simple scientific language Begin to use some science words. Use comparative language with support.	Use simple scientific language and some science words. Use comparative language – bigger, faster etc	Begin to use some scientific language to talk and, later, write about what they have found out. Begin to use relevant scientific language. Begin to use comparative and superlative language	Use some scientific language to talk and, later, write about what they have found out. Use relevant scientific language. Use comparative and superlative language	Start to read, spell and pronounce scientific vocabulary correctly. Start to use relevant scientific language and illustrations to discuss, communicate and justify scientific ideas. Begin to confidently use a range of scientific vocabulary. Begin to use conventions such as trend, rogue result, support prediction and -er word generalisation.	Read, spell and pronounce scientific vocabulary correctly. Use relevant scientific language. Use illustrations to discuss, communicate and justify scientific ideas. Confidently use a range of scientific vocabulary. Use conventions such as trend, rogue result, support prediction and -er word generalisation.

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						Begin to use scientific ideas when describing simple processes.	Use scientific ideas when describing simple processes. Can use the correct science vocabulary
Understanding		<p>Begin to talk about how science helps us in our daily lives eg. torches and lights help us see hen it is dark.</p> <p>Begin to understand science can sometimes be dangerous</p>	<p>Talk about how science helps us in our daily lives eg. torches and lights help us see hen it is dark.</p> <p>Begin to understand science can sometimes be dangerous</p>	<p>Begin to know which things in science have made our lives better.</p> <p>Begin to understand risk in science.</p>	<p>Knows which things in science have made our lives better.</p> <p>Understand there is some risk in science.</p>	<p>Begin to talk about how scientific ideas have changed over time.</p> <p>Start to explain the positive and negative effects of scientific development.</p> <p>Begin to see how science is useful in everyday life.</p> <p>Start to say which parts of our lives rely on science</p>	<p>Talk about how scientific ideas have changed over time.</p> <p>Explain the positive and negative effects of scientific development.</p> <p>See how science is useful in everyday life.</p> <p>Say which parts of our lives rely on science</p>