**Working Scientifically**

Year 1

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| --- | --- | --- | --- | --- | --- | --- |
| Questioning and enquiring Planning | Observing and measuring Pattern seeking | Investigating | Recording and reporting findings | Identifying, grouping and classifying | Research | Conclusions |
| ask simple questions about the world around us.    begin to recognise that they can be answered in different ways | observe closely, using simple equipment.    use simple observations and ideas to suggest answers to questions.    observe simple changes over time and, with guidance, begin to notice patterns and relationships.    say what they are looking for and what they are measuring.  know how to use simple equipment safely.    use simple measurements and equipment with support (eg hand lenses and egg timers)    begin to progress from non-standard units, reading cm, l, °c | perform simple tests with support.    begin to discuss ideas about how to find things out.  begin to say what happened in an investigation. | gather and record data with some adult support, to help in answering questions.    begin to record simple data.    begin to record and communicate their findings in a range of ways.    show results in a simple table that has been provided . | identify and classify with some support.    begin to observe and identify, compare and describe.    begin to use simple features to compare objects, materials and living things and, with help, decide how to sort and group them | begin to use simple secondary sources to find answers. Books and computers with help. | begin to talk about what they have found out and how they found it out.    begin to say what happened in an investigation.  begin to say whether they were surprised at the results or not.  begin to say what they would change about their investigation. |

**Working Scientifically**

Year 2

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| Questioning and enquiring Planning | Observing and measuring Pattern seeking | Investigating | Recording and reporting findings | Identifying, grouping and classifying | Research | Conclusions |
| ask questions about the world around us. | observe closely, using simple equipment.  use observations and ideas to suggest answers to questions.    observe changes over time and, with guidance, begin to notice patterns and relationships.    say what they are looking for and what they are measuring.  know how to use simple equipment safely.    use simple measurements and equipment with increasing independence (eg hand lenses and egg timers)     * begin to progress from non-standard units, reading mm, cm, m, ml, l, °c | perform simple tests.    discuss their ideas about how to find things out.    say what happened in an investigation. | gather and record data to help in answering questions.    record simple data.    record and communicate their findings in a range of ways.    show results in a table that the teacher has provided. | identify and classify.    observe and identify, compare and describe.    use simple features to compare objects, materials and living things and, with help, decide how to sort and group them. | use simple secondary sources to find answers.    can find information to help me from books and computers with help. | talk about what they have found out and how they found it out.    say what happened in the investigation.  say whether they were surprised at the results or not.  say what they would change about an investigation. |

**Working Scientifically**

Year 3

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| --- | --- | --- | --- | --- | --- | --- |
| Questioning and enquiring Planning | Observing and measuring Pattern seeking | Investigating | Recording and reporting findings | Identifying, grouping and classifying | Research | Conclusions |
| ask some relevant questions and use different types of scientific enquiries to answer them.    begin to explore everyday phenomena and the relationships between living things and familiar environments.    begin to develop their ideas about functions, relationships and interactions.    begin to raise their own questions about the world around them.    begin to make some decisions about which types of enquiry will be the best way of answering questions | begin to make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.  begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them.  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.    learn to use some new equipment appropriately | 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 | gather, record, and begin to classify and present data in a variety of ways to help in answering questions.    begin to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.    begin to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.    begin to use notes, simple tables and standard units and help to decide how to record and analyse their data. | begin to identify differences, similarities or changes related to simple scientific ideas and processes.    begin to talk about criteria for grouping, sorting and classifying and use simple keys.    begin to compare and group according to behaviour or properties, based on testing. | begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations. | 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 look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.  with support, identify new questions arising from the data, make new predictions and find ways of improving what they have already done. |

**Working Scientifically**

Year 4

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| Questioning and enquiring Planning | Observing and measuring Pattern seeking | Investigating | Recording and reporting findings | Identifying, grouping and classifying | Research | Conclusions |
| ask relevant questions and use different types of scientific enquiries to answer them.    explore everyday phenomena and the relationships between living things and familiar environments.    begin to develop their ideas about functions, relationships and interactions.    raise their own questions about the world around them.    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 systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.  begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them.  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.    learn to use new equipment appropriately (eg data loggers). | 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. | gather, record, classify and present data in a variety of ways to help in answering questions.    record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.    report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.    use notes, simple tables and standard units and help to decide how to record and analyse their data. | identify differences, similarities or changes related to simple scientific ideas and processes.    talk about criteria for grouping, sorting and classifying and use simple keys.    compare and group according to behaviour or properties, based on testing | begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations. | look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.  identify new questions arising from the data, make new predictions and find ways of improving what they have already done.  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. |

**Working Scientifically**

Year 5

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| Questioning and enquiring Planning | Observing and measuring Pattern seeking | Investigating | Recording and reporting findings | Identifying, grouping and classifying | Research | Conclusions |
| begin to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.    begin to explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically.    begin to recognise some more abstract ideas and begin to recognise how these 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 | begin to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.  begin to identify patterns that might be found in the natural environment.    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.  choose the most appropriate equipment and explain how to use it accurately.    begin to interpret data and find patterns.  begin to make accurate and precise measurements –– n, g, kg, mm, cm, mins, seconds, cm²v, km/h, m per sec, m/ sec graphs – pie, line. | 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 method and give reasons.  begin to decide when it is appropriate to do a fair test. | begin to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs.  begin to report and present findings from enquiries.  begin to decide how to record data from a choice of familiar approaches.  begin to choose how best to present data. | begin to use and develop keys and other information records to identify, classify and describe living things and materials. | recognise which secondary sources will be most useful to research their ideas | 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.    begin to identify scientific evidence that has been used to support or refute ideas or arguments.    begin to draw conclusions based on their data and observations, use evidence to justify their ideas, use scientific knowledge and understanding to explain their findings.    begin to use test results to make predictions to set up further comparatives and fair tests.    begin to look for different causal relationships in their data and identify evidence that refutes or supports their ideas.  use their results to identify when further tests and observations are needed.    begin to separate opinion from fact. |

**Working Scientifically**

Year 6

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| --- | --- | --- | --- | --- | --- | --- |
| Questioning and enquiring Planning | Observing and measuring Pattern seeking | Investigating | Recording and reporting findings | Identifying, grouping and classifying | Research | Conclusions |
| plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.    explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, relationships and interactions more systematically.    recognise more abstract ideas and begin to recognise how these ideas help them to understand how the world operates.    recognise scientific ideas change and develop over time.    select the most appropriate ways to answer science questions using different types of scientific enquiry | take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. identify patterns that might be found in the natural environment.    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.  choose the most appropriate equipment and explain how to use it accurately.  interpret data and find patterns.  make a set of observations and say what the interval and range are.    Make accurate and precise measurements – n, g, kg, mm, cm, mins, seconds, cm²v, km/h, m per sec, m/ sec graphs – pie, line, bar | 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 the method and give reasons.  decide when it is appropriate to do a fair test. | record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs.    report and present findings from enquiries.    decide how to record data from a choice of familiar approaches.    choose how best to present data | use and develop keys and other information records to identify, classify and describe living things and materials. | recognise which secondary sources will be most useful to research their ideas | 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.    draw conclusions based on their data and observations, use evidence to justify their ideas, use scientific knowledge and understanding to explain their findings.    use test results to make predictions to set up further comparatives and fair tests.    look for different causal relationships in their data and identify evidence that refutes or supports their ideas.  use their results to identify when further tests and observations are needed.    separate opinion from fact.  draw conclusions and identify scientific evidence. |

*“On our journey of faith, with Jesus as our guide, we share friendship, value learning and show*

*respect for ourselves and others, as we live, learn, play, work and pray together in our community.”*