

ASTON & COTE CE PRIMARY SCHOOL
SCIENCE SKILLS PROGRESSION



YEAR	Ideas and Evidence in Science
1	Can recognise that scientists find out about scientific ideas by asking questions and testing them.
2	Can recognise that scientists collect evidence by making observations and measurements in order to answer a question.
3	Can recognise why it is important to collect evidence by making observations and measurements to answer a question, and that science has made our lives better.
4	Can recognise that scientific ideas are based on evidence, have made our lives better and that there is some risk in science.
5	Can describe how experimental evidence and creative thinking are combined to provide scientific explanations, that has changed over time.
6	Can describe how experimental evidence and creative thinking are combined to provide scientific explanations, that change over time and has both positive and negative effects.
Asking Questions and Enquiry	
1	Can ask some simple questions to find out about the world around us and with teacher guidance, recognise that they can be answered using different types of enquiry (observing changes over time, noticing patterns, grouping/classifying, simple comparative tests and using secondary sources).
2	Can ask simple questions to find out about the world around us and make simple suggestions about the different types of enquiry that could be used to collect evidence to answer a question (observing changes over time, noticing patterns, grouping/classifying, simple comparative tests and using secondary sources)
3	Can recognise how scientific ideas and concepts can be turned into relevant questions that can be investigated and put forward their own ideas about how to find the answer to a scientific question using different types of enquiries (observing changes over time, noticing patterns, grouping/classifying, comparative tests, fair tests and using secondary sources)
4	Can turn existing scientific ideas into a question form that can be investigated and begin to plan different types of scientific enquiries, including recognising and controlling variables with teacher guidance.
5	Can form scientific questions for enquiry based on scientific ideas/concepts and recognise which can be investigated and those which are theoretical. Plan different types of enquiries to answer questions, including identifying and controlling variables.

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Can explore scientific ideas/concepts and form clear enquiry questions about scientific phenomena, recognising which can be investigated and those which are theoretical. Select and plan the most appropriate types of enquiry to answer questions, including identifying and controlling variables, where necessary.

Predicting and Hypothesising

1	Can make a simple prediction, 'I think...'
2	Can make a prediction with a simple reason, 'I think...because...'
3	Can make a prediction, giving a reason based on everyday experience
4	Can make a prediction, giving a reason which considers scientific ideas and is based on everyday experience
5	Can hypothesise, giving a reason which considers scientific ideas and uses knowledge of a similar everyday experience applied it to a new situation, e.g. I think little bits of sugar dissolve faster than a sugar lump
6	Can hypothesise, giving a reason which is based on scientific concepts and uses knowledge of a similar everyday experience, applied it to a new situation, e.g. I think little bits of sugar dissolve faster than a sugar lump

Planning an Enquiry

1	Can plan a simple test guided by the teacher
2	Can make a simple plan for a test within a framework provided by the teacher, e.g. using a planning frame or set of questions, focusing on a limited number of variables
3	Can make a simple plan which identifies the basic features of the test, e.g. what is being changed, what is being measured and which variables are being controlled to keep the test fair
4	Can decide on a clear plan to answer the question which identifies the key features of a fair test, e.g. what is being changed, what is being measured and which variables are being controlled to keep the test fair
5	Can decide on an appropriate way to collect data to answer a question and with guidance, create a clear plan which identifies the independent, dependent and control variables
6	Can identify and plan an appropriate approach to answer a scientific question, identifying clear independent, dependent and control variables

Fair Testing

1	Can recognise unfairness and what is being changed in a test
2	Can, with teacher guidance, identify what is being changed, what is being measured, and one or two variables which need to stay the same in order to make the test fair
3	Can carry out a fair test which identifies the variable being changed, measured and controlled. Recognise and explain why it is fair

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Can make a plan which identifies how one variable is changed, while all the others are kept the same

5	Can identify key variables to be considered and with teacher guidance, choose one independent variable to change, decide how to measure the effect (dependent variable) and which variables to control
6	Can identify key variables to be considered and choose an appropriate variable to be varied (independent variable), measured for effect (dependent variable) and variables that need to be controlled.
Observing and Measuring	
1	Can begin to observe closely using simple equipment provided and measure in non-standard units. For example, compare length, area and volumes visually, mass by feel, temperature by touch, time by clapping or ordering, sound, light force using senses
2	Can use simple equipment provided to make observations and measurements related to the test, measuring in standard and non-standard units.
3	Can make observations and measurements which are relevant to the test. Can measure quantities in standard units, using a range of simple equipment.
4	Can select suitable equipment for a test and make a series of accurate observations and measurements which are adequate for the test.
5	Can select apparatus for a range of tests and use effectively, making a series of systematic observations, measurements and comparisons. Can recognise patterns and begin to repeat observations and measurements, offering simple explanations for any differences found.
6	Can select apparatus for a range of tests and use effectively, making a series of systematic observations, measurements and comparisons with precision appropriate to the test. Can recognise patterns and repeat observations and measurements, offering possible explanations for any differences found.
Investigating	
1	Can perform simple tests with support
2	Can perform simple tests
3	Can set up simple practical enquiries and consider fair tests
4	Can set up simple practical enquiries and consider comparative and fair tests
5	Can set up practical enquiries and use results to begin to set up comparative and fair tests
6	Can set up practical enquiries and use results to to plan and set up further comparative and fair tests
Recording Results	
1	Can describe simple features, observations and measurements and record in a variety of simple ways, e.g. pictures, words, provided tables

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Can describe observations and measurements in a variety of ways, including simple tables, labelled drawings, bar charts and through the use of scientific vocabulary

3	Can record observations and measurements in a variety of ways, including ICT. Can record results in a variety of ways, including simple tables, labelled diagrams, keys and bar charts.
4	Can record observations, measurements and comparisons using tables, including ICT. Can construct their own tables, choosing headings and the number and range of measurements, draw labelled diagrams, keys and bar charts.
5	Can record observations and measurements systematically, including the use of ICT. Can begin to choose the best method, e.g. scientific diagrams, classification keys, tables, bar and line graphs, repeated tests and averaging (mean)
6	Can record observations and measurements systematically, including the use of ICT. Can record results of increasing complexity and choose the best recording method, e.g. scientific diagrams, classification keys, tables, bar and line graphs, repeated tests and averaging (mean)
Presenting Results	
1	Can, where appropriate, record observations in a bar chart (e.g. pictogram) with axis labelled by the teacher
2	Can, where appropriate and supported by the teacher, record observations and measurements in simple bar charts
3	Can, where appropriate, record observations and standard measurements in bar charts, deciding on the axes
4	Can, where appropriate, record observations, measurements and comparisons using bar charts, choosing scale and labelling axes. Can begin to plot points to form simple graphs and use these to point out and interpret patterns in data
5	Can, where appropriate, present data as bar charts and line graphs. Can construct bar and line graphs, selecting scale and labelling axes. Can begin to interpret and systematically explain patterns in data.
6	Can, where appropriate, choose to present increasingly complex data as bar charts and line graphs. Can construct bar and line graphs, selecting scale and labelling axes. Can interpret and systematically explain patterns in data.
Drawing Conclusions	
1	Can talk about what happened, communicating their findings in a simple way, e.g. talk, drawing, simple charts
2	Can explain what happened and relate this to their earlier prediction made
3	Can identify and explain simple patterns in recorded measurements and observations, and communicate what has been found in a simple scientific way
4	Can begin to relate conclusions to patterns in data and to prior scientific knowledge and understanding. Can explain conclusions using appropriate scientific language

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Can draw conclusions which are consistent with evidence and relate these to scientific knowledge and understanding. Can use appropriate scientific language and conventions to communicate quantitative and qualitative data

6	Can draw clear conclusions, which are linked to evidence from data patterns and relate these to scientific knowledge and understanding. Can use accurate scientific language and conventions to communicate quantitative/qualitative data and explain causal relationship.
Reviewing the Test	
1	Can identify which parts of the test have been done well and which need to be improved
2	Can question how carefully the test has been carried out and what needs improvement
3	Can suggest improvements to the test to improve accuracy
4	Can suggest improvements to the tests, giving reasons
5	Can evaluate the accuracy of tests and make practical suggestions about how working methods could be improved
6	Can evaluate the effectiveness of their tests, the limitations and suggest how methods could be improved