



## Skills Progression in working scientifically

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Ideas and evidence</b>	Pupils will begin to understand that undertaking a test or experiment will give us information or data	Build on the skills developed in Year 1. Consider how data can be used in science.	They recognise why it is important to collect data to answer questions	Pupils recognise that scientific ideas are based on evidence	Pupils describe how experimental evidence and creative thinking have been combined to provide a scientific explanation <i>for example, Jenner's work on vaccination at key stage 2, Lavoisier's work on burning</i>	Pupils describe evidence for some accepted scientific ideas and explain how the interpretation of evidence by scientists leads to the development and acceptance of new ideas.
<b>Planning</b>	Pupils are able to discuss ideas to how they may be able to find something out through a test or experiment. They may need to be supported to use the correct vocabulary.	Pupils respond to suggestions about how to find things out and, with help, make their own suggestions about how to collect data to answer questions. They use simple texts, with help, to find information.	Pupils respond to suggestions and put forward their own ideas about how to find the answer to a question. They use simple texts to find information. Where appropriate, they carry out a fair test with some help, recognising and explaining why it is fair.	In their own investigative work, they decide on an appropriate approach <i>for example, using a fair test</i> to answer a question. Where appropriate, they describe, or show in the way they perform their task, how to vary one factor while keeping others the same. Where appropriate, they make predictions. They select information from sources provided for them	When they try to answer a scientific question, they identify an appropriate approach. They select from a range of sources of information. When the investigation involves a fair test, they identify key factors to be considered. Where appropriate, they make predictions based on their scientific knowledge and understanding	In their own investigative work, they use scientific knowledge and understanding to identify an appropriate approach. They select and use sources of information effectively.
<b>Carrying out</b>	With some support, children can use simple equipment to carry out an investigation	They use simple equipment provided and make observations related to their task. They observe and compare objects, living things and events.	They make relevant observations and measure quantities, such as length or mass, using a range of simple equipment	They select suitable equipment and make a series of observations and measurements that are adequate for the task	They select apparatus for a range of tasks and plan to use it effectively. They make a series of observations, comparisons or measurements with precision appropriate to the task.	They make enough measurements, comparisons and observations for the task. They measure a variety of quantities with precision, using instruments with fine-scale divisions.
<b>Interpreting and evaluating</b>	With support, they begin to identify what has happened and why this may be so	They say whether what happened was what they expected	They provide explanations for observations and for simple patterns in recorded measurements. They suggest improvements in their work.	They use their graphs to point out and interpret patterns in their data. They begin to relate their conclusions to these patterns and to scientific knowledge and understanding. They suggest improvements in their work, giving reasons.	They begin to repeat observations and measurements and to offer simple explanations for any differences they encounter. They draw conclusions that are consistent with the evidence and begin to relate these to scientific knowledge and understanding. They make practical suggestions about how their working methods could be improved.	They identify measurements and observations that do not fit the main pattern shown. They draw conclusions that are consistent with the evidence and use scientific knowledge and understanding to explain them. They make reasoned suggestions about how their working methods could be improved.
<b>Recording and presenting data</b>	Pupils describe or respond appropriately to simple features of objects, living things and events they observe. Communicate findings in simple ways <i>e.g. talking about their work, drawings etc</i>	They describe their observations using scientific vocabulary and record them, using simple tables when appropriate	They record their observations in a variety of ways. They communicate in a scientific way what they have found out.	They record their observations, comparisons and measurements using tables and bar charts. They begin to plot points to form simple graphs. They begin to communicate their conclusions with appropriate scientific language.	They record observations and measurements systematically and, where appropriate, present data as line graphs. They use appropriate scientific language and conventions to communicate quantitative and qualitative data.	They choose scales for graphs and diagrams that enable them to show data and features effectively. They select and use appropriate methods for communicating qualitative and quantitative data using scientific language and conventions.

