






Scientific Enquiry Progression of Skills

| | ELG | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|--|--|---|--|--|
|  <p>Identify & Classify</p> | <p>Comment and ask questions about aspects of their familiar world such as places where they live or the natural world.</p> | | | <p>They recognise why it is important to collect data to answer questions</p> | <p>Pupils recognise that scientific ideas are based on evidence</p> | <p>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 at key stage.</i></p> | <p>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.</p> |
|  <p>Research</p> | <p>Show curiosity about objects, events and people.</p> <p>Question why things happen.</p> <p>Develop ideas of grouping, sequences, cause and effect</p> | | <p>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.</p> | <p>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.</p> | <p>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</p> | <p>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</p> | <p>In their own investigative work, they use scientific knowledge and understanding to identify an appropriate approach. They select and use sources of information effectively.</p> |
|  <p>Comparative testing</p> | <p>Handle equipment and tools effectively.</p> <p>Choose the resources they need for their chosen activity.</p> <p>Find ways to solve problems/ find new ways to do things/ test their ideas.</p> | <p>Observations and suggestions</p> | <p>They use simple equipment provided and make observations related to their task. They observe and compare objects, living things and events.</p> | <p>They make relevant observations and measure quantities, such as length or mass, using a range of simple equipment</p> | <p>They select suitable equipment and make a series of observations and measurements that are adequate for the task</p> | <p>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.</p> | <p>They make enough measurements, comparisons and observations for the task. They measure a variety of quantities with precision, using instruments with fine-scale divisions.</p> |
|  <p>Pattern seeking</p> | <p>Develop their own narratives and explanations by connecting ideas or events.</p> <p>Make links or notice patterns in their experience.</p> | <p>Suggest answers to questions, simple testing</p> | <p>They say whether what happened was what they expected</p> | <p>They provide explanations for observations and for simple patterns in recorded measurements. They suggest improvements in their work.</p> | <p>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.</p> | <p>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.</p> | <p>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.</p> |
|  <p>Observation over time</p> | <p>Engage in open-ended activity.</p> <p>Closely observe what animals, people and vehicles do.</p> <p>Create simple representations of events, people and objects.</p> <p>Make observations of animals and plants and explain why some things occur and talk about changes.</p> | <p>Pupils describe or respond appropriately to simple features of objects, living things and events they observe, communicating their findings in simple ways <i>for example, talking about their work, through drawings, simple charts</i></p> | <p>They describe their observations using scientific vocabulary and record them, using simple tables when appropriate</p> | <p>They record their observations in a variety of ways. They communicate in a scientific way what they have found out.</p> | <p>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.</p> | <p>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.</p> | <p>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.</p> |