**Observing over Time: Skills Progression Grid**

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|  | Plan | Do | Review |
| Foundation | I am curious about things that change.  With help I ask questions about things changing.  I talk about my ideas for finding out how things change. | I use all my senses to observe changes.  I look closely at how things change.  I make simple records of how things change (with help where necessary).  I use simple equipment to observe and record changes. | I talk about what I have done and what I noticed. |
| Early Primary | I ask questions about how and why things change.  With help, I identify changes to observe and measure and suggest how to do it. | I use non-standard units and simple equipment to record changes.  I record in words or pictures, or in simple prepared formats such as tables and charts. | I identify simple changes and talk about them.  I sequence the changes.  I begin to use scientific language to talk about changes.  I talk about whether the change was what I expected. |
| Middle Primary | I talk about things changing and recognise when questions can be answered by observing over time.  I decide what observations to make, how often and what equipment to use. | I use a range of equipment to collect data using standard measures.  I make records using tables and bar charts.  I begin to use and interpret graphs produced by dataloggers. | I draw simple conclusions from the changes I observed.  I talk about changes using some scientific language.  I suggest improvements to the ways I observe. |
| Late Primary | I decide when observing changes over time will help to answer my questions.  I decide how detailed my observations need to be, and what equipment to use, to make my measurements as accurate as possible. | I use equipment accurately without support.  I record data appropriately.  I present data in line graphs.  I interpret changes in the data.  I recognise the effect of changing the time and number of observations. | I draw valid conclusions from data about changes.  I recognise the significance of things changing over time.  I talk about and explain changes using scientific knowledge and understanding.  I evaluate how well I observed over time. |

**Comparative and Fair Testing: Skills Progression Grid**

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|  | **Plan** | **Do** | **Review** |
| **Foundation** | I am curious about how things behave.  With help I ask questions about things I can test.  I talk about my ideas for testing how things behave. | I use my senses to look closely at how things behave.  I carry out simple tests.  I make simple records of what I notice (with help where necessary)  I use simpleequipment to observe and record. | I talk about what I have done and what I noticed.  I talk about whether something makes a difference. |
| **Early Primary** | I ask why and how questions.  I make comparisons about how things behave.  With help, I notice links between cause and effect.  With help, I identify simple variables to change and measure.  I plan simple comparative tests. | I use non-standard units and simple equipment to record data.  I record in words or pictures, or in simple prepared formats such as tables and tally charts. | I talk about my data.  I use comparative data to rank materials or objects.  I use scientific language to describe simple causal relationships.  With help, I can say if my test was fair.  I say if the relationship was what I expected. |
| **Middle Primary** | I talk about links between cause and effect and (with help) pose a fair test question.  I help to plan a comparative or fair test.  I decide what data to collect.  I decide what equipment to use and how to make observations. | I use a range of equipment to collect data using standard measures.  I make records using tables and bar charts.  I begin to use and interpret data collected through dataloggers. | I draw simple conclusions from my comparative and fair tests.  I talk about, and explain, simple causal relationships using some scientific language.  I suggest ways that I can improve my fair tests. |
| **Late Primary** | I recognise when variables need to be controlled and decide when a comparative or fair test is the best way to answer my question.  I plan a comparative or fair test, selecting variables to measure, change and keep the same.  I decide what equipment to use to make my measurements as accurate as possible. | I use equipment accurately to collect observations.  I record data appropriately and accurately.  I present data in line graphs.  I identify causal relationships. | I draw valid conclusions based on the data.  I recognise the significance of the results of comparative and fair tests.  I talk about and explain causal relationships using scientific knowledge and understanding.  I evaluate the effectiveness of my comparative and fair testing, recognising variables that were difficult to control. |

**Research: Skills Progression Grid**

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|  | **Plan** | **Do** | **Review** |
| **Foundation** | I am curious about things in my surroundings.  With help I ask questions that I can answer using secondary sources | I listen carefully.  I know that information in books and electronic media can be used to answer questions.  I find pictures of things.  I talk to people about what they do and how things work. | I talk about things I found out. |
| **Early Primary** | I ask questions about how things are and the way they work.  With help, I make suggestions about how to find things out. | I use simple books and electronic media to find things out.  I ask questions to find out what people do and how things work.  I record in words and pictures what I found out. | I begin to use scientific language to talk about what I found out.  I talk about whether the information source was useful.  I give an opinion about some things I found out. |
| **Middle Primary** | I talk about how things are and the way they work and recognise when questions can be answered by research using secondary sources | I use information sources to find the information I need.  I use someone else’s data.  I record what I found out in my own words.  I present information in different ways. | I draw conclusions from what I found out from the different sources.  I talk about what the information and data means using some scientific language.  I suggest ways to improve how I found out and use information. |
| **Late Primary** | I decide when research using secondary sources will help to answer my questions.  I decide which sources of information might answer my questions. | I use relevant information and data from a range of secondary sources.  I recognise how data has been obtained.  I start to notice when information and data is biased or based on opinions rather than facts.  I present my findings in suitable formats. | I draw valid conclusions from my research.  I talk about and explain my research using scientific knowledge and understanding.  I evaluate how well my research has answered my questions.  I recognise that some scientific questions may have not been answered definitively. |

**Pattern Seeking: Skills Progression Grid**

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|  | **Plan** | **Do** | **Review** |
| **Foundation** | I am curious about patterns.  With help, I ask questions about patterns.  I talk about my ideas for finding out about patterns. | I use my senses to look closely for patterns.  I observe more than one thing at a time.  I make simple records of what I notice (with help where necessary)  I use simple equipment to observe and record patterns. | I talk about what I have done and the patterns I noticed. |
| **Early Primary** | I ask questions about why and how things are linked.  With help, I decide what patterns to observe and measure and suggest how to do it. | I use non-standard units and simple equipment to record events that might be related.  I record in words or pictures, or in simple prepared formats such as tables, tally charts and maps. | I identify simple patterns and talk about them.  I make links between two sets of observations.  I begin to use scientific language to talk about patterns.  I talk about whether the pattern was what I expected. |
| **Middle Primary** | I talk about where patterns might be found and recognise when questions can be investigated by pattern seeking.  I decide on which sets of data to collect, what observations to make and what equipment to use. | I use a range of equipment to collect data using standard measures.  I make records using tables, bar charts or simple scatter graphs.  I begin to use and interpret data collected through dataloggers. | I draw conclusions about simple patterns between two sets of data.  I talk about patterns using some scientific language.  I suggest improvements to the way I looked for patterns. |
| **Late Primary** | I recognise when variables cannot be controlled and decide when pattern seeking will help to answer my question.  I decide how detailed my data needs to be, and which equipment to use, to make my measurements as accurate as possible. | I use equipment accurately to collect observations.  I record data appropriately and accurately.  I present data in scatter graphs and frequency charts.  I recognise patterns in results.  I recognise the effect of sample size on reliability. | I draw valid conclusions from data about patterns and recognise their limitations.  I recognise the significance of relationships between sets of data.  I talk about and explain cause and effect patterns using scientific knowledge and understanding.  I evaluate how well I looked for patterns. |

**Identifying and Classifying: Skills Progression Grid**

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|  | Plan | Do | Review |
| Foundation | I am curious about similarities and differences  With help I ask questions about similarities and differences.  I talk about my ideas for sorting and matching things. | I use my senses to sort and match things.  I match things that are the same.  I find things that are similar or different.  I sort or group things in my own way.  I use simple equipment to help me sort things (e.g. boxes, hoops) | I talk about how I sorted or matched things.. |
| Early Primary | I ask questions about how and why things are similar or different.  I decide what to observe to identify or sort things. | I make comparisons between simple features of objects, materials or living things.  I record my observations in words or pictures or simple tables.  I sort objects by observable and behavioural features.  I record my sorting in sorting circles or tables | I identify similarities and differences and talk about them.  I begin to use simple scientific language to talk about how things are similar or different.  I try to use my records to help sort or identify other things. |
| Middle Primary | I talk about what criteria I will use to sort and classify things.  I decide what equipment to use to identify and classify things.  I talk about things that can be grouped and recognise when questions can be answered by sorting and classifying. | I carry out simple tests to sort and classify according to properties and behaviour.  I use Carroll diagrams, Venn diagrams and more complex tables to sort things.  I use simple keys and branching databases to identify things.  I make simple branching databases (keys) for things that have clear differences. | I draw simple conclusions about the things I have sorted and classified.  I talk about the similarities and differences I identified using some scientific language.  I suggest improvements to the way I sort and identify things. |
| Late Primary | I decide when identifying and classifying will be helpful to answer my questions.  I decide what equipment, tests and secondary sources of information to use to identify and classify things. | I use a series of tests to sort and classify materials.  I use secondary sources to identify and classify things.  I make my own keys and branching databases with four or more items.  I use more than one piece of scientific evidence to identify and classify things. | I draw valid conclusions when sorting and classifying.  I recognise the significance of sorting and classifying.  I talk about and explain what I have done using scientific knowledge.  I evaluate how well my keys worked. |