

Working Scientifically – Alverton Skills Progression Upper Key Stage 2

Plan	Do	Review
Identifying, classifying and grouping		
<p>I recognise when identifying and classifying will be the best way to answer my question.</p> <p>I decide what equipment, tests and secondary sources of information to use to identify and classify things.</p>	<p>I use a series of tests to sort and classify materials.</p> <p>I use secondary sources to identify and classify things.</p> <p>I make my own classification keys and branching databases with four or more items.</p> <p>I use more than one piece of scientific evidence to identify and classify things.</p>	<p>I draw valid conclusions when sorting and classifying.</p> <p>I report and explain what I have done using scientific ideas.</p> <p>I evaluate how well my key/branching database worked.</p>
Observing over time		
<p>I recognise when observing changes over time will be the best way to answer my question.</p> <p>I decide how detailed my observations need to be and what equipment to use, to make my observations/measurements as accurate as possible.</p>	<p>I select scientific equipment and use it with increasing accuracy. I take repeat readings when appropriate.</p> <p>I record data and results of increasing complexity.</p> <p>I present data in line graphs.</p> <p>I recognise the effect of changing the time and number of observations.</p>	<p>I draw valid conclusions from data about changes.</p> <p>I interpret changes in the data.</p> <p>I report and explain changes using scientific ideas.</p> <p>I evaluate how well I observed over time.</p> <p>I use my results to predict and set up further observations.</p>
Pattern seeking		
<p>I recognise when variables cannot be controlled and pattern seeking will be the best way to answer my question.</p> <p>I decide how detailed my data needs to be and which equipment to use, to make my measurements/observations as accurate as possible.</p>	<p>I select scientific equipment and use it with increasing accuracy. I take repeat readings when appropriate.</p> <p>I record data and results of increasing complexity.</p> <p>I present data in scatter graphs and frequency charts.</p> <p>I recognise patterns in results.</p> <p>I recognise the effect of sample size on reliability.</p>	<p>I draw valid conclusions from data about patterns and recognise their limitations.</p> <p>I report and explain cause and effect patterns using scientific ideas.</p> <p>I evaluate how well I looked for patterns.</p> <p>I use my results to predict and set up further pattern seeking.</p>
Research using secondary sources		
<p>I recognise when research using secondary sources will be the best way to answer my question.</p> <p>I decide which sources of information might answer my question.</p>	<p>I use relevant information and data from a range of secondary sources.</p> <p>I recognise how data has been obtained.</p> <p>I present my findings in a variety of suitable formats.</p>	<p>I draw valid conclusions from my research.</p> <p>I am beginning to notice when information and data is biased or based on opinion rather than facts.</p> <p>I evaluate how well my research has answered my questions and recognise that some scientific questions may not have been answered definitively.</p>
Comparative and fair testing		
<p>I recognise when variables need to be controlled and a fair test is the best way to answer my question.</p> <p>I plan a fair test, recognising the most suitable variables to measure, change and keep the same and what equipment to use to make my measurements as accurate as possible.</p>	<p>I select scientific equipment and use it with increasing accuracy, I take repeat readings when appropriate.</p> <p>I record data and results of increasing complexity.</p> <p>I present data in line, bar and scatter graphs.</p>	<p>I draw valid conclusions based on the data.</p> <p>I report and explain causal relationships using scientific ideas,</p> <p>I evaluate the effectiveness of my fair testing, recognising variables that were difficult to control and where my results were trustworthy.</p> <p>I use my results to predict and set up further comparative or fair tests.</p> <p>I identify scientific evidence that supports or refute ideas or arguments.</p>

