

## ‘Working Mathematically’: Lower Key Stage 2 (‘Phase B’)

### Application

<b>Ideas, questions and lines of enquiry</b>	<ul style="list-style-type: none"> <li>develops the mathematics they use in a wide range of contexts                     <ul style="list-style-type: none"> <li><i>makes suggestions of ways to tackle a range of problems</i></li> <li><i>makes connections to previous work</i></li> </ul> </li> <li>chooses equipment appropriate to the task independently</li> <li><i>poses and answers questions related to a problem and suggests a range of possible approaches to the solution</i></li> </ul>
<b>Represent and communicate</b>	<ul style="list-style-type: none"> <li>represents problems pictorially, using a model or with concrete resources - <i>restates the problem in another way</i></li> <li>presents work in a clear and organised way - <i>uses and interprets a wide range of mathematical symbols and diagrams</i></li> <li>begins to work in an organised way from the start using strategies such as recording results in order and checks for accuracy</li> <li>discusses their mathematical work and uses mathematical language in a more precise and accurate way</li> </ul>
<b>Plan an approach and implement it</b>	<ul style="list-style-type: none"> <li>uses facts and procedures to solve simple and more complex problems</li> <li>develops own strategies for solving problems and applying mathematics to practical contexts</li> <li>finds solutions that match the context of the problem</li> </ul>
<b>Computational complexity</b> (Within the range of number facts known)	<ul style="list-style-type: none"> <li>solves problems with more than one step at least one of which is more complex</li> </ul>

### Reasoning

<b>Make connections</b>	<ul style="list-style-type: none"> <li>makes connections to previous work within mathematics and with other subjects</li> <li>poses and answer questions that will help make sense of the problem</li> <li>poses ‘What if?’ questions that may change the outcome or direction of the problem</li> </ul>
<b>Evaluate</b>	<ul style="list-style-type: none"> <li>suggests refinements to elements of problem solving by comparing other approaches and against ‘modelled’ examples</li> </ul>
<b>Draw conclusions</b>	<ul style="list-style-type: none"> <li>predicts conclusions and reason why when referring to work</li> <li>comments on whether the conclusion was expected</li> <li>makes valid inferences when referring to own work</li> </ul>
<b>Generalise</b>	<ul style="list-style-type: none"> <li>finds solutions and makes predictions by identifying patterns when working</li> <li>forms generalised rules in words, using concrete resources or own representation</li> </ul>
<b>Justify</b>	<ul style="list-style-type: none"> <li>justifies answers and solutions by referring to their work and support with examples</li> </ul>

### Problem solving strategies

<ul style="list-style-type: none"> <li>identifies irrelevant information; uses lists and tables to identify and organise information</li> <li>uses informed ‘guess and check’</li> <li>seeks a pattern</li> <li>draws a diagram or model</li> <li>seeks an exception</li> <li>breaks the problem down into simpler steps - <i>e.g. works backwards</i></li> </ul>
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