

## Curriculum Overview for Mathematics

### Year 8

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| <p><b>NP10: Introduction to Proportion</b></p> <p><b>Declarative Knowledge</b></p> <ul style="list-style-type: none"> <li>• Ratio tables and double number lines represent proportional relationships</li> <li>• Define similar</li> <li>• Identify whether a question or context is using direct or inverse proportion</li> </ul> <p><b>Procedural Knowledge</b></p> <ul style="list-style-type: none"> <li>• Calculate with direct proportion</li> <li>• Calculate with inverse proportion</li> <li>• Calculate a percentage increase</li> <li>• Calculate a percentage decrease</li> </ul> <p><b>Contextual Knowledge</b></p> <ul style="list-style-type: none"> <li>• Solve reasoning and problem-solving questions with direct proportion</li> <li>• Solve reasoning and problem-solving questions with inverse proportion</li> <li>• Calculate exchange rates</li> <li>• Calculate best buys</li> <li>• Calculate recipe amounts from a given or needed ingredient</li> <li>• Solve reasoning and problem-solving questions with percentages</li> </ul> | <br> | <p>Reading like a Mathematician<br/>Subject specific vocabulary definitions and choral response<br/>Reading reasoning and problem-solving questions</p> <p>Direct proportion, Inverse proportion, Unit, Value, Exchange, Multiplier, Enlargement, Similar, Scale factor, Percent, Increase, Decrease</p> |
|   |   | <p>End of unit assessment with feedback lesson to address misconceptions<br/>Content from this unit will be included in the formal endpoint assessment</p>   |

  

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| <p><b>A4: Solving Equations</b></p> <p><b>Disciplinary knowledge</b></p> <ul style="list-style-type: none"> <li>• Identify terms and expressions</li> <li>• Identify equations</li> <li>• Know the meaning of equal</li> <li>• Know the inverse operations</li> </ul> <p><b>Procedural knowledge</b></p> <ul style="list-style-type: none"> <li>• Balance equations using inverse operations</li> <li>• Solve equations with one-step</li> <li>• Solve equations with multiple steps</li> <li>• Form equations</li> </ul> | <br> | <p>Reading like a Mathematician<br/>Subject specific vocabulary definitions and choral response<br/>Reading reasoning and problem-solving questions</p> <p>Unknown, expression, equation, term, solve</p> |
|   |   | <p>End of unit assessment with feedback lesson to address misconceptions<br/>Content from this unit will be included in the formal endpoint assessment</p>  |

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| <p><b>A4: Solving Equations</b></p> <p><b>Disciplinary knowledge</b></p> <ul style="list-style-type: none"> <li>• Identify terms and expressions</li> <li>• Identify equations</li> <li>• Know the meaning of equal</li> <li>• Know the inverse operations</li> </ul> <p><b>Procedural knowledge</b></p> <ul style="list-style-type: none"> <li>• Balance equations using inverse operations</li> <li>• Solve equations with one-step</li> <li>• Solve equations with multiple steps</li> <li>• Form equations</li> </ul> | <br> | <p>Reading like a Mathematician<br/>Subject specific vocabulary definitions and choral response<br/>Reading reasoning and problem-solving questions</p> <p>Unknown, expression, equation, term, solve</p> |
|   |   | <p>End of unit assessment with feedback lesson to address misconceptions<br/>Content from this unit will be included in the formal endpoint assessment</p>  |

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| <b>Contextual knowledge</b> <ul style="list-style-type: none"> <li>• Solve equations with brackets</li> <li>• Solve equations with fractions</li> <li>• Solve equations with decimals</li> </ul> |  | 1 hour of Sparx Maths homework needs to be completed every week<br><br>Revision for formal assessment using provided revision booklet |
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| <b>SP1 – SP2: Discrete and Bivariate Data</b> <p><b>Disciplinary knowledge</b></p> <ul style="list-style-type: none"> <li>• Categorise types of data</li> <li>• Know and use the vocabulary of statistics</li> <li>• Identify bivariate data</li> <li>• Know and use the vocabulary of statistics</li> <li>• Know that correlation does not mean causation</li> </ul> <p><b>Procedural knowledge</b></p> <ul style="list-style-type: none"> <li>• Read data from and construct frequency tables and bar charts</li> <li>• Read data from and construct pie charts</li> <li>• Calculate summary statistics (mean, median and mode averages and range as a spread of data)</li> <li>• Read, interpret and construct scatter graphs</li> <li>• Identify correlation, including categorising as positive, negative or no correlation</li> <li>• Construct lines of best fit</li> <li>• Construct lines of best fit using the mean point</li> <li>• Read, interpret and construct time-series graphs</li> </ul> <p><b>Contextual knowledge</b></p> <ul style="list-style-type: none"> <li>• Critique frequency tables, bar charts and pie charts</li> <li>• Work with percentages in pie charts</li> <li>• Compare data and identify misleading data represented in charts/graphs</li> <li>• Calculate summary statistics from frequency tables</li> <li>• Describe the strength of correlations</li> <li>• Predict data using lines of best fit within data – interpolation</li> <li>• Predict data using lines of best fit outside of data – extrapolation</li> </ul> | <br><br> | Reading like a Mathematician<br>Subject specific vocabulary definitions and choral response<br>Reading reasoning and problem-solving questions<br><br>Qualitative, quantitative, discrete, continuous, mean, median, mode, range, variable, univariate data, bivariate data, correlation, outlier, line of best fit, interpolation, extrapolation, trend<br><br>End of unit assessment with feedback lesson to address misconceptions<br>Content from this unit will be included in the formal endpoint assessment |
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