

# Long Term Plan Maths

Year 9

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Unit</b>	<ul style="list-style-type: none"> <li>Calculating</li> <li>Visualising and constructing</li> <li>Algebraic Proficiency: tinkering</li> </ul>	<ul style="list-style-type: none"> <li>Algebraic Proficiency: tinkering</li> <li>Proportional Reasoning</li> <li>Assessment&amp; Enrichment</li> </ul>	<ul style="list-style-type: none"> <li>Pattern Sniffing</li> <li>Solving equations and Inequalities I</li> </ul>	<ul style="list-style-type: none"> <li>Calculating Space</li> <li>Conjecturing Assessment&amp; Enrichment</li> </ul>	<ul style="list-style-type: none"> <li>Algebra: Visualising</li> <li>Solving Equations and Inequalities II</li> </ul>	<ul style="list-style-type: none"> <li>Solving Equations and Inequalities II</li> <li>Understanding risk I</li> <li>Presentation of data</li> <li>Assessment&amp; Enrichment</li> </ul>
<b>Skills, Knowledge, and Learning</b>	<p>Over the course of this half term pupils will look at calculations involving roots and integer indices, progressing onto work with standard form. Pupils will also be building on their knowledge of inequalities and using the inequality notation to identify simple error intervals and interpret limits of accuracy. These topics will build and promote <b>Fluency</b> and <b>mathematical reasoning</b>. Pupils will also look at constructions skills and using them within a <b>problem solving</b> context, as well as Plans and Elevations linking to the wider world.</p>	<p>Over the course of this half term pupils will look at an introduction into Algebra and recapping their knowledge from KS3 to further build on their <b>Fluency</b> within Algebra. Pupils will gain confidence with how to manipulate aspects of Algebra and apply these skills to <b>problem solving</b> questions and justify their own solutions building on their <b>mathematical reasoning</b> skills. Pupils will focus on proportion but graphically and also in a practical way linking to real life scenarios. Pupils also have time this term to complete an assessment covering all topics covered to date, allowing for pupils reflection and opportunity to prevent gaps in learning and delve deeper into topics where needed.</p>	<p>During this term pupils will have the opportunity to develop their knowledge of patterns and sequences, making connections with previous Number and Algebra units to develop <b>Fluency</b> across units. Pupils will also be revisiting the concepts of inequalities and linking their knowledge of solving equations, basic number skills and inequalities further developing <b>Fluency</b> and <b>mathematical reasoning</b>.</p>	<p>During this term pupils will be learning definitions for parts of a circle and understanding how to use and apply formula for both area and circumference of complete and parts of a circles, as well as working with surface area of other prisms. Pupils will be introduced to the concept of Pythagoras' Theorem and how to complete multi step problem solving question, which are common to the GCSE exams, allowing student to develop the <b>mathematical reasoning</b> as well as their <b>problem solving</b> skills. Building on the pupils knowledge of Pythagoras Theorem, they develop <b>mathematical reasoning</b> skills for congruency and similarity within triangles.</p>	<p>Over this term pupils will revisit their work on patterns and make connections between sequences and plotting linear graphs and identifying the key aspects of linear graphs and being able to interpret them in a real life context. This term pupils will also develop their <b>fluency</b> skills by developing their knowledge to recognize, sketch and interpret graphs of different functions. Pupils will further develop their algebra <b>fluency</b> by looking at different way to solve different equations using various methods and building in <b>problem solving</b> questions where students need to derive</p>	<p>During this final term pupils will continue to develop their <b>fluency</b> and <b>mathematical reasoning</b> within Algebra. They will also be introduced to probability and develop their <b>mathematical reasoning</b> and <b>problem-solving</b> skills when looking at the effect of independent and dependent events can have. Pupils will be working on different methods of collecting and displaying data and drawing conclusions from their results further developing their <b>mathematical reasoning skills</b>. Pupils will also complete an end of year assessment, which will allow for in depth analysis and review to take place in preparation for the final year of GCSE.</p>

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				Towards the end of the term, pupils will have the opportunity to complete assessments on topics covered to date, and allow for supplementary work to prevent gaps in their knowledge identified by the assessment.	the equations as well as solve them	
<b>NC/Qualification Objectives</b>	<ul style="list-style-type: none"> <li>• N7</li> <li>• N8</li> <li>• N13</li> <li>• N14</li> <li>• G4</li> </ul>	<ul style="list-style-type: none"> <li>• A1</li> <li>• A3</li> <li>• A4</li> <li>• R9</li> <li>• R10</li> <li>• G12</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• A3</li> <li>• A7</li> <li>• A14</li> <li>• A15</li> <li>• A16</li> <li>• N14</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• G2</li> <li>• G7</li> <li>• G9</li> <li>• G14</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• A3</li> <li>• A11</li> <li>• A12</li> <li>• A13</li> </ul>	<ul style="list-style-type: none"> <li>• A3</li> <li>• P1</li> <li>• P2</li> <li>• P4</li> <li>• S1</li> <li>• S2</li> <li>• S3</li> </ul>
<b>Enrichment/ Experiences</b>	<ul style="list-style-type: none"> <li>- Winchester Intech- – planning the journey, trains, driving, average speeds.</li> <li>- London Eye- Distance it travels, speed to travels, Parts of a circle, limits of accuracy, journey planning, costings,</li> </ul>					
<b>Curriculum End Point / Goal</b>	<p>By the end of this year pupils will have completed the Key Stage 3 Curriculum. Pupils should now be able to freely apply a range of learnt skills across different units within maths and understand how different units are connected. Pupils should feel confident to take complex problems, analyse and evaluate these and break them down into manageable chunks, before using correct operation selection to solve the problem. Pupils should be able to reason mathematically and draw conclusions from their work. Pupils should be able to solve problem mentally, through written methods and with the support of a calculator.</p> <p>Pupils will have recapped and further developed fluency with topics covered in Year 7 &amp; 8 and be prepared to move forward onto a GCSE specification in Year 10.</p>					