



## VISION

At Nobel we work hard to give students the confidence to acquire mathematical skills that they can use throughout their lifetime, we hope students can share our love of mathematics and enjoy the challenge it is able to offer.

	<b>Foci</b>	<b>Assessment</b>	<b>Knowledge Organiser</b>
<b>Unit 1 - Recap</b>	<p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>Understand the connections between methods of calculation for fractions, decimals and percentage</li> <li>Be able to apply the four operations to fractions, decimals and percentage</li> <li>Experience manipulating and comparing methods of calculation involving fractions, decimals and percentage</li> </ul>	<p>Online assessment.</p> <p>In class assessment.</p>	<p><b><u>F,D,P</u></b></p>
<b>Unit 2/3</b>	<p><b>Probability</b></p> <ul style="list-style-type: none"> <li>Understand and use the probability scale from 0 to 1.</li> <li>Understand and use the language associated with probability.</li> <li>Understand the relationship between relative frequency and theoretical probability.</li> <li>Understand that different trials of an experiment may produce different outcomes.</li> <li>Systematically list outcomes using a variety of representations.</li> <li>Use Venn diagrams and understand the meaning of union and intersection.</li> </ul>	<p>Online assessment.</p> <p>In class assessment.</p> <p>End of Half term test units 1-3</p>	<p><b><u>Probability</u></b></p>



<b>Unit 4</b>	<p><b>Simultaneous equations</b></p> <ul style="list-style-type: none"><li>• Understand that addition and subtraction of simultaneous equations can result in the elimination of a variable</li><li>• Experience pattern spotting and conjecturing to establish formal methods for eliminating variables</li><li>• Be able to use equivalent equations –through scaling and rearranging</li><li>• To solve simultaneous equations</li></ul>	<p>Online assessment on Hegarty for all students.</p> <p>In class assessment.</p>	<p><u><a href="#">Simultaneous Equations</a></u></p>
<b>Unit 5</b>	<p><b>Linear Graphs</b></p> <ul style="list-style-type: none"><li>• Identify the equations of horizontal and vertical lines</li><li>• Plot coordinates from a rule to generate a straight line</li><li>• Identify key features of a linear graph</li><li>• Make links between the graphical and the algebraic representation</li><li>• Identify parallel lines from algebraic equations</li></ul> <p><b>Graphical Solutions</b></p> <ul style="list-style-type: none"><li>• Understand coordinates as solutions to linear equations, including intersections as simultaneous solutions</li><li>• Be able to solve simultaneous linear equations graphically</li><li>• Experience visualising trends in and intersections of linear equations</li></ul>	<p>Online assessment.</p> <p>In class assessment.</p> <p>Half termly assessment to cover units 1-5.</p>	<p><u><a href="#">Linear Graphs</a></u></p> <p><u><a href="#">Graphical Solutions</a></u></p>



<b>Unit 6</b>	<p><b>Constructions/Loci</b></p> <ul style="list-style-type: none"><li>perpendicular bisector of a line segment</li><li>constructing a perpendicular to a given line from/at a given point</li><li>bisecting a given angle</li></ul> <p><b>Congruence</b></p> <ul style="list-style-type: none"><li>Determine when two shapes are congruent</li><li>Understand and use the criteria for congruent triangles</li><li>Give detailed reasons to justify congruence in increasingly complex situations</li></ul>	<p>Online assessment on Teams for all students.</p> <p>In class assessment.</p>	<p><u><a href="#">Constructions</a></u></p> <p><u><a href="#">Congruence</a></u></p>
<b>Unit 7</b>	<p><b>Pythagoras Theorem</b></p> <ul style="list-style-type: none"><li>Prove and use Pythagoras' theorem to find missing sides in right-angled triangles.</li><li>Solve associated problems in other shapes including right-angled triangles.</li><li>Deduce whether a triangle is right-angled by considering its sides.</li></ul>	<p>Online assessment.</p> <p>In class assessment.</p> <p>Half termly assessment to cover units 1-7, main focus units 5-7.</p>	<p><u><a href="#">Pythagoras</a></u></p>
<b>Unit 8</b>	<p><b>Similarity and Enlargement</b></p> <ul style="list-style-type: none"><li>Enlarge shapes from a given centre, with and without coordinate grids</li><li>Understand that the corresponding angles of similar shapes are equal</li><li>Solve problems involving similar triangles</li></ul>	<p>Online assessment.</p> <p>In class assessment.</p>	<p><u><a href="#">Similarity</a></u></p>



	<b>Foci</b>	<b>Assessment</b>	<b>Knowledge Organiser</b>
<b>Unit 9a</b>	<b>Introduction to Trigonometry</b> <ul style="list-style-type: none"><li>Investigate the trigonometric ratios using similar triangles</li><li>Define and use the cosine, sine and tangent ratios</li><li>Develop an understanding of the trigonometric ratios</li><li>Solve problems using trigonometric ratios in right-angled triangles</li></ul>	Online assessment.  In class assessment.	<u><a href="#">Trigonometry</a></u>
<b>Unit 9b</b>	<b>Surds</b> <ul style="list-style-type: none"><li>To be able to simplify surds through addition and subtraction.</li><li>To be able to simplify a surd by taking out a square factor.</li><li>To be able to multiply and divide surds</li><li>To problem solve using surds.</li></ul>	Online assessment.  In class assessment.  Half termly assessment to cover units 1-9, main focus units 8 and 9.	<u><a href="#">Surds</a></u>
<b>Unit 10</b>	<b>Quadratic Expressions</b> <ul style="list-style-type: none"><li>Expanding double brackets to create a quadratic</li><li>Factorise a quadratic by taking out common factors.</li><li>Factorise a quadratic into double brackets.</li></ul>	Online assessment.  In class assessment.	<u><a href="#">Quadratics</a></u>
<b>Unit 11</b>	<b>Quadratic Equations</b> <ul style="list-style-type: none"><li>Solve a quadratic that has been factorised</li><li>Solve quadratics using a variety of suitable techniques.</li><li>Understand what this looks like on a graph and solve problems.</li></ul>	Online assessment.  In class assessment.	<u><a href="#">Quadratics</a></u>



<b>Unit 12</b>	<b>Indices and Standard Form</b> <ul style="list-style-type: none"><li>• Simplify using the rules of indices.</li><li>• Write large and small numbers in standard form.</li><li>• Write standard form numbers as an ordinary number.</li><li>• Calculations in standard form.</li></ul>	Online assessment. In class assessment. End of year test. Online assessments and in class assessments.	<u><a href="#">Indices</a></u> <u><a href="#">Standard Form</a></u>
<b>Unit 13</b>	<b>Growth and Decay</b> <ul style="list-style-type: none"><li>• Look at geometric sequences for growth and decay,</li><li>• Look at compounding rates for increases and decreases.</li></ul>	Online assessment In class assessment	<u><a href="#">Growth and Decay</a></u>



**Nobel**

**Year: 9**

**Subject: Mathematics**