



# Year 11 Maths Learning Journey



**YEAR GROUP: 11**

**SUBJECT: Maths**

When?	Topic	Knowledge	Unit Assessments
HALF TERM 1	<b>Probability: Combined events</b>	<ul style="list-style-type: none"> <li>work out the probability of two events</li> <li>draw and use tree diagrams</li> <li>use probability for independent events</li> <li>use conditional probability.</li> </ul>	Probability of 2 events, tree diagrams, independent events, conditional probability
	<b>Geometry &amp; Measures: Properties of circles: (circle theorems)</b>	<ul style="list-style-type: none"> <li>prove and use circle theorems to work out angles</li> <li>work out angles in cyclic quadrilaterals</li> <li>use tangents, chords and alternate segment theorem to work out angles in circles.</li> </ul>	Prove and use circle theorems, cyclic quadrilaterals, tangents, chords and alternate segment theorem
HALF TERM 2	<b>Ratio, proportion and rates of change: Variation</b>	<ul style="list-style-type: none"> <li>solve problems where two variables are connected by a relationship in which they vary in direct proportion</li> <li>solve problems where two variables are connected by a relationship in which they vary in indirect proportion</li> <li>recognise graphs that illustrate direct and inverse proportion.</li> </ul>	Direct proportion, indirect (inverse) proportion, graphs that represent direct & inverse proportion  SOHCAHTOA in 2D and 3D problems, solve simple trig equations eg $\sin x = 0.2$ , Sine and Cosine rule, area of a triangle



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	<p data-bbox="241 395 689 427"><b>Geometry &amp; measures: triangles</b></p> <p data-bbox="241 874 477 906"><b>Algebra: Graphs</b></p>	<ul data-bbox="927 400 1491 1458" style="list-style-type: none"><li>• use trigonometric ratios to solve more complex 2D problems and 3D problems</li><li>• calculate the sine, cosine and tangent of any angle from 0° to 360°</li><li>• use the sine and cosine rules to solve problems involving non right-angled triangles</li><li>• use the formula <math>A = \frac{1}{2}ab\sin C</math> to calculate the area of a triangle.</li> <li>• work out speed from a distance–time graph</li><li>• interpret the gradients of straight lines on a velocity–time graph</li><li>• calculate and interpret the area under a velocity–time graph consisting of straight lines</li><li>• draw a graph of the depth of liquid as a container is filled</li><li>• estimate and interpret the area under a curve</li><li>• work out and interpret a gradient at a point on a curve</li><li>• find the equation of a tangent to a circle</li><li>• recognise and draw cubic, reciprocal and exponential graphs</li></ul>	<p data-bbox="1570 655 2119 831">Speed, gradients on a velocity-time graph, area under a velocity-time graph, area under a curve, gradient at a point, equation of a tangent to a circle, cubic, reciprocal and exponential graphs, transform graphs</p>



When?	Topic	Knowledge	Unit Assessments
	<p><b>Algebra: Algebraic fractions &amp; functions</b></p>          <p><b>Geometry &amp; Measures: vector geometry</b></p>	<ul style="list-style-type: none"><li>• transform a graph.</li>  <li>• combine fractions algebraically and solve equations with algebraic fractions</li><li>• rearrange and change the subject of a formula where the subject appears twice, or as a power</li><li>• find the inverse function and the composite of two functions</li><li>• find an approximate solution for an equation using the process of iteration.</li>  <li>• add and subtract vectors</li><li>• the properties of vectors</li><li>• use vectors to solve geometrical problems</li><li>• prove geometric results.</li></ul>	<p>Algebraic fractions, rearrange formula, inverse &amp; converse functions</p>          <p>Add &amp; subtract vectors, properties of vectors, vector problems, vector proof</p>