

Subject	Year 10 Threshold Concepts – Autumn Term	How to support students' learning
Mathematics	<p data-bbox="450 236 909 264"><b><u>Percentages and Proportional Change</u></b></p> <ul data-bbox="499 276 1106 448" style="list-style-type: none"> <li>• Solve percentage problems including using multipliers</li> <li>• Solve real world ratio and proportion problems</li> <li>• Solve problems involving direct and inverse proportion</li> </ul> <p data-bbox="450 636 685 665"><b><u>Circles and Volume</u></b></p> <ul data-bbox="499 676 1167 922" style="list-style-type: none"> <li>• Calculate the circumference and area of a circle</li> <li>• Calculate perimeters and areas of arcs and sectors</li> <li>• Calculate perimeters and areas of quadrilaterals and compound shapes</li> <li>• Calculate volumes of 3D shapes</li> <li>• Use length, area and volume scale factors (Higher tier only)</li> </ul> <p data-bbox="450 1042 1010 1070"><b><u>Equations, Quadratics and Algebraic Fractions</u></b></p> <ul data-bbox="499 1082 1160 1366" style="list-style-type: none"> <li>• Solve linear equations</li> <li>• Solve linear inequalities</li> <li>• Solve simple quadratic equations by factorising</li> <li>• Solve simultaneous equations</li> <li>• Solve quadratic equations using the formula and by completing the square (Higher tier only)</li> <li>• Solve non-linear simultaneous equations algebraically (Higher tier only)</li> </ul>	<ul data-bbox="1249 276 2007 1222" style="list-style-type: none"> <li>• Encourage your child to use a multiplier when solving percentage problems. Look at percentage problems eg discounts, interest rates, tax etc</li> <li>• Discuss applications of ratio and proportion eg baking, currency</li> <li>• Encourage your child to show clear working out as the find the constant of proportionality</li> <li>• Use <a href="http://www.mymaths.co.uk">www.mymaths.co.uk</a> for support if needed. Teachers will have provided your child with a login and password.</li> <li>• Encourage your child to write down the formula they are using and then show all their working out when doing calculations. If they have homework online then encourage them to write down all their working out in their exercise books.</li> <li>• Encourage your child to learn the names and parts of the different 2D and 3D shapes</li> <li>• Use <a href="http://www.mymaths.co.uk">www.mymaths.co.uk</a> for support if needed. Teachers will have provided your child with a login and password.</li> <li>• Encourage your child to practise their algebra skills, they can use <a href="http://www.mymaths.co.uk">www.mymaths.co.uk</a> and there are additional resources on the online curriculum</li> </ul>

	<ul style="list-style-type: none"> <li>• Manipulate algebraic fractions and solve equations (Higher tier only)</li> <li>• Use iterative methods for solving equations</li> </ul>	
	<p><b><u>Algebraic Manipulation</u></b></p> <ul style="list-style-type: none"> <li>• Factorising and expanding</li> <li>• Rearranging formulae</li> <li>• Complete the square (Higher tier only)</li> <li>• Expand triple brackets (Higher tier only)</li> <li>• Sequences</li> <li>• Recognising sequences</li> </ul> <p><b><u>Surds and Indices</u></b></p> <ul style="list-style-type: none"> <li>• Calculate squares, cubes and their roots</li> <li>• Use index laws with integer powers</li> <li>• Use index laws with fractional and negative powers (Higher tier only)</li> <li>• Manipulate surds (Higher tier only)</li> <li>• Use surds to give answers in exact form (Higher tier only)</li> <li>• Rationalise the denominator (Higher tier only)</li> </ul> <p><b><u>Probability</u></b></p> <ul style="list-style-type: none"> <li>• Review skills from Year 9</li> <li>• Use simple set notation</li> <li>• Use tree diagrams</li> <li>• Construct and interpret Venn Diagrams (Higher tier only)</li> <li>• Solve problems involving conditional probability (Higher tier only)</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage your child to show all their working out. If they have homework online then encourage them to write down all their working out in their exercise books.</li> <li>• Use <a href="http://www.mymaths.co.uk">www.mymaths.co.uk</a> for support if needed. Teachers will have provided your child with a login and password</li>   <li>• Encourage your child to learn the laws of indices. These will be in their books.</li>   <li>• Encourage your child to look back at their probability notes from last year</li> <li>• Use <a href="http://www.mymaths.co.uk">www.mymaths.co.uk</a> for support if needed. Teachers will have provided your child with a login and password.</li> </ul>