

## Long Term Plan: Year 10 Mathematics (10a/Ma1, 10a/Ma2)

T e r m 1	W.C 04.09.23	W.C 11.09.23	W.C 18.09.23	W.C 25.09.23	W.C 02.10.23	W.C 09.10.23	W.C 30.10.23	W.C 06.11.23	W.C 13.11.23	W.C 20.11.23	W.C 27.11.23	W.C 04.12.23	W.C 11.12.23	W.C 18.12.23
	Equations and Inequalities			Simultaneous Equations			Similarity and Congruence			Right-Angled Trigonometry		Non-right angled Trigonometry		
	<ul style="list-style-type: none"> <li>One/two-step equations/inequalities</li> <li>Inequalities on a number line</li> <li>Inequality solutions on graphs</li> <li>Equations/inequalities unknowns both sides</li> <li>Forming and solving equations inequalities</li> <li>Solve quadratics by factorisation</li> <li>Solve quadratic inequalities</li> <li>Solve quadratics using the quadratic formula</li> </ul>			<ul style="list-style-type: none"> <li>Solve simultaneous equations including adjusting one or both linear equations (elimination)</li> <li>Form and solve simultaneous</li> <li>Solve by elimination</li> <li>Solve a simultaneous equations – one linear one quadratic graphically and algebraically</li> </ul>			<ul style="list-style-type: none"> <li>Enlarge fractional and negative SFs</li> <li>Missing sides/angles in similar shapes</li> <li>Establish that triangles are similar particularly using angles in parallel lines</li> <li>Area and volume with similar shapes</li> <li>Understand congruency and prove triangles are congruent using criteria (SSS SAS ASA RHS)</li> </ul>			<ul style="list-style-type: none"> <li>Use Sin/Cos/Tan to find missing lengths</li> <li>Use Sin/Cos/Tan to find missing angles</li> <li>Multi-step problems</li> <li>Non-calculator exact values and problems</li> <li>3D trigonometry</li> </ul>		<ul style="list-style-type: none"> <li>1/2abSinc for area of a triangle</li> <li>Sine rule for missing lengths and angles</li> <li>Cosine rule of missing lengths and angles</li> <li>Multi-step problems using combination of all three non right-angled rules</li> <li>Exam problems with sine/cosine e.g. bearings, algebraic problems etc.</li> </ul>		
T e r m 2	W.C 01.01.24	W.C 08.01.24	W.C 15.01.24	W.C 22.01.24	W.C 29.01.24	W.C 05.02.24	W.C 19.02.24	W.C 26.02.24	W.C 04.03.24	W.C 11.03.24	W.C 18.03.24	W.C 25.03.24		
	Ratio/Fractions/Percentages			Surds and Bounds			Working with Circles			Vectors				
	<ul style="list-style-type: none"> <li>Ratio basics/division/problem solving</li> <li>Hard ratio-fractions problems</li> <li>Combining sets of ratios</li> <li>Ratio and algebra</li> <li>Ratios and area/volume problems</li> <li>Percentage calculations inc reverse</li> <li>Simp/comp interest and growth/decay</li> <li>Iterative multiplier questions</li> </ul>			<ul style="list-style-type: none"> <li>Multiply/divide/simplify surds</li> <li>Add/subtract/expand with surds</li> <li>Rationalise denominators and simplify complex surd expressions</li> <li>Problems with estimation/rounding</li> <li>Error intervals and bounds</li> <li>Multi-step bounds problems with formulae and geometry</li> </ul>			<ul style="list-style-type: none"> <li>Recap part-circle area and perimeters</li> <li>Area of sectors and arc lengths</li> <li>Reverse arc/sector problems</li> <li>Circle theorems – ‘basic’ four theorems</li> <li>Circle theorems – involving tangents</li> <li>Volume/surface area of spheres/cylinders/cones</li> <li>Reverse volume/SA and similar shape problems</li> </ul>			<ul style="list-style-type: none"> <li>Vector notation and scalars</li> <li>Column vector add/subtract</li> <li>Vector journeys with shapes</li> <li>Understand parallel vectors and co-linear points</li> <li>Geometric arguments/proof using vectors</li> </ul>				
T e r m 3	W.C 15.04.24	W.C 22.04.24	W.C 29.04.24	W.C 06.05.24	W.C 13.05.24	W.C 20.05.24	W.C 03.06.24	W.C 10.06.24	W.C 17.06.24	W.C 24.06.24	W.C 01.07.24	W.C 08.07.24	W.C 15.07.24	W.C 22.07.24
	Data Handling			Probability			HCF/LCM/Prime Factors, Index Laws and Standard Form			Y10 PPEs		Algebraic Fractions and Proof		
	<ul style="list-style-type: none"> <li>Stratified sampling</li> <li>Frequency polygons, two-way tables, pie charts</li> <li>Construct and interpret histograms</li> <li>Averages from tables especially grouped</li> <li>Compare data using averages</li> <li>Cumulative frequency and box plots inc. IQR</li> <li>Compare data using CF and box plots</li> <li>Scatter graphs</li> </ul>			<ul style="list-style-type: none"> <li>Basics – sums to one, relative frequency, estimate outcomes</li> <li>Probabilities from tables, frequency trees, venn diagrams</li> <li>Tree diagrams for independent and dependent events</li> <li>Tree diagrams (conditional)</li> <li>Algebraic probability problems</li> </ul>			<ul style="list-style-type: none"> <li>Prime factorisation and HCF/LCM</li> <li>First three basic laws of indices recap</li> <li>Zero power and negative indices</li> <li>Fractional and negative indices</li> <li>Write/convert/compare numbers in standard form</li> <li>Calculate with numbers in standard form</li> <li>Multi-step standard form problems</li> </ul>					<ul style="list-style-type: none"> <li>Add/subtract algebraic fractions</li> <li>Multiply/divide basic algebraic fractions</li> <li>Multiply/divide including quadratic factorisation and cancellation</li> <li>Solve equations involving algebraic fractions</li> <li>Represent numbers algebraically and construct algebraic proofs</li> </ul>		

Higher+ Skills Aimed at Grades 8 - 9