

**Learning Programme – Mathematics – 4<sup>th</sup> Year – Set 2**

<b>Topic/ Content</b>	<b>Objectives/Skills (topic grade in brackets)</b>	<b>Homework</b>	<b>Assessment</b>	<b>Success Criteria (GCSE grades)</b>	<b>Stretch &amp; Challenge (Thirst for Learning)</b>
	<b>Trinity Term</b>				
<b>Gradient and equations</b>	Draw graphs of functions by plotting co-ordinates. Calculate and use gradient (3). Determine equation of straight line graphs (4). Equation of parallel lines (4).	Two to three teacher marked pieces of homework will be set each half-term.	End of Year Exam (close to May Half-Term), on all topics covered at Secondary school.	Mainly determined from End of Year Exam, however, Half-Term tests, class work & homework may also be used.  GCSE Grade boundaries dependent on difficulty of test.	Students will be challenged using extension questions on the topics they are studying, designed to develop their ability to solve multi-staged problems.
<b>Perpendicular Lines</b>	Equation of perpendicular lines (7). Equation of line between two points (5).				
<b>Graphs and further graphs</b>	Recognise quadratic (5), cubic (5), reciprocal (6) and exponential (7) graphs. Draw graphs of quadratic functions and use them to solve quadratic equations, identify and interpret roots, intercepts and turning points (7). Calculate or estimate gradients of graphs and areas under graphs.				
<b>Angle rules</b>	Use basic angle rules; angles on straight line, angles at a point, vertically opposite angles (3). Identify angles on parallel lines (3). Interior and exterior angles of polygons (3).				
<b>Angles in circles</b>	Identifying the different parts of a circle. Understand / prove the special rules for angles in circles (8). Finding missing angles using angle in circle rules and using them as part of geometric proofs (8).				
<b>Congruent triangles</b>	Identifying triangles are congruent (6) Using congruent triangles for geometric proofs (7).				
<b>Linear and Quadratic Inequalities</b>	Understanding and writing inequalities (4). Solving 'linear' inequalities (5). Representing and interpreting inequalities on graphs. Solve quadratic inequalities (8/9).				
<b>Sequences</b>	Recognise and use rules for number and pattern sequences, including triangular, square, cube & Fibonacci-type numbers,				

	arithmetic sequences, quadratic sequences and geometric sequences (3/4) Finding the $n^{\text{th}}$ term for linear (4) and quadratic sequences (7).				
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