

Learning Programme – Mathematics – 4th Year – Set 3

Topic/ Content	Objectives/Skills (topic grade in brackets)	Homework	Assessment	Success Criteria (GCSE grades)	Stretch & Challenge (Thirst for Learning)
	Trinity Term				
Standard Form	Writing very large and small numbers in standard form (4). Performing calculations with numbers in standard form (5).	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 overall scores across the year group.	Students will be challenged using extension questions on the topics they are studying, designed to develop their ability to solve multi-staged problems.
Accuracy	Finding the lower and upper bound of rounded numbers (5). Calculating using the lower and upper bound (7). Calculate absolute and percentage error.				
Area, perimeter and volume	Area & perimeter of parallelograms (3), triangles (3), trapeziums (4), circles (4) and compound shapes (4). Volume (4) and surface area (5) of prisms. Converting between different metric units of length, area and volume (4).				
Arc & Sectors	Calculating the length of an arc and the area of a sector (6).				
Compound Measures	Calculate compound measures; e.g density and pressure (4).				
Length, area volume and enlargement	Calculating the volume and surface area of pyramids (including frustums-6), cones (5) and spheres (5). Calculate rates of flow in/out of containers (8). Using scale factors for surface area and volume for enlargement of similar solids.				
Loci and constructions	Constructing triangles using protractor, compass & ruler (3). Performing compass and straight edge constructions, including an angle of 60° (4). Solving locus problems (4). Know that the perpendicular distance from a point to a line is the shortest distance to the line.				
Gradient and equations	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).				
Perpendicular Lines	Equation of parallel and perpendicular lines (7). Equation of line between two points (5).				
	Identify direct and indirect proportion.				

Direct and inverse proportion	Perform calculations involving direct and inverse proportionality (7). Recognise and interpret proportionality graphs (7).				
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