

Curriculum Map – GCSE Higher Mathematics

Learning Phase 1 – Year 10		
Knowledge	Skills	Rationale
ALL students cover:	Through the mathematics content, pupils are taught to:	The order in which topics are taught are as recommended by the Route Map provided by AQA, the exam board which we use. However, faculty time and INSET time were used to check/amend hours needed for each unit of work eg Unit 11 Circumference and Area was increased from 6 to 7 hours, Unit 19 Standard Form and Unit 24 Calculating with Percentages were both decreased from 4 to 3 hours, and Unit 25 Statistical Measures was reduced from 6 hours to 4 hours.
Unit Topic	Develop fluency:	Differentiated schemes of work were then written – one for the higher groups sitting the Higher GCSE tier and one for the lower groups sitting the Higher GCSE tier.
1 Angles, scale diagrams and bearings	consolidate their numerical and mathematical capability from key stage 3 and extend their understanding of the number system to include powers, roots {and fractional indices}	
2 Basic number, factors and multiples		
3 Basic algebra review	select and use appropriate calculation strategies to solve increasingly complex problems, including exact calculations involving multiples of π {and surds}, use of standard form and application and interpretation of limits of accuracy	
4 Fractions and decimals		
5 Coordinates and linear graphs		
6 Rounding		
7 Collecting and representing data		
8 Sequences		
9 Basic percentages		
10 Perimeter and area	consolidate their algebraic capability from key stage 3 and extend their understanding of algebraic simplification and manipulation	
11 Circumference and area		
12 Real life graphs		
13 Ratio and proportion	extend fluency with expressions and equations from key stage 3	
14 Properties of polygons		
15 Equations		
16 Indices	move freely between different numerical, algebraic, graphical and diagrammatic representations, including of linear functions	
17 Surds		
18 Basic probability		
19 Standard form	use mathematical language and properties precisely	
20 Measures		
21 Transformations		
22 Congruence and similarity	Reason mathematically	
23 2D representations of 3D shapes	extend and formalise their knowledge of ratio and proportion in working with measures and geometry, and in working with proportional relations algebraically	
24 Calculating with percentages		
25 Statistical measures		
26 Constructions and loci	extend their ability to identify variables and express relations between variables algebraically and graphically	
27 Probability		
28 Volume	make and test conjectures about the generalisations that underlie patterns and relationships	
		When there are 8 teaching sets (current yr11), due to the prior attainment (KS2 and 3) of the students in set 5 when in year 10, this class is often a mixed tier set.
		Close monitoring of these students takes place in order to ensure that they are ultimately entered for the most suitable tier. The units for higher and foundation, although not in the same order, broadly cover the same content in year 10. For this reason the higher (core) scheme is followed but students are assessed at both tiers for assessments 1 and 2. For end of unit homework assessments, the class teacher chooses the most appropriate tier for each student. Students and parents are fully aware that ongoing assessment will result in tier of entry decisions in yr11.

	• reason deductively in geometry, number and algebra, including using geometrical constructions • interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning • explore what can and cannot be inferred in statistical and probabilistic settings, and express their arguments formally • assess the validity of an argument and the accuracy of a given way of presenting information Solve problems • develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems • develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts • make and use connections between different parts of mathematics to solve problems • model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions • select appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems; interpret their solution in the context of the given problem	We currently have 7 teaching sets in yr10 and the tiers are split 1-4 (Higher), 5-7(Foundations). The above procedure applies to set 4 in this case. The order of topics is determined generally by the knowledge and skills which are pre-requisites for future topics. The subject content matches that set out in the Department for Education's Mathematics GCSE subject content and assessment objectives document, and is common to all exam boards.
Assessment 1 (NOV): One 1-hour paper covering Units 1-5. Assessment 2 (MARCH): One 1-hour paper covering Sequences, Percentages & Properties of Polygons. Assessment 3 (JUNE): Two 90 minute papers (Paper 1: Non-calculator, Paper 2: Calculator) covering Units 1-17.		