

Key Stage 4 Mathematics Curriculum Maps



	AUTUMN							SPRING							SUMMER						
	1	2	3	4	5	6	7	16	17	18	19	20	21	22	27	28	29	30	31	32	
Year 10 Foundation	Topic – Calculating				Topic – Visualising and constructing			See week 15	Topic – Solving equations and inequalities I			Topic – Calculating space			See week 25/26	Topic – Solving equations and inequalities II			Topic – Algebraic proficiency: visualizing II		
	P - Calculate with powers and roots				Sk - use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle)				P - understand and use the concepts and vocabulary of inequalities			Sk - Solve problems involving arcs and sectors				Sk - Solve simultaneous equations			Sk - Explore graphs of quadratic functions		
	P - Explore the use of standard form				Sk - use these to construct given figures and solve loci problems; know that the perpendicular distance from a point to a line is the shortest distance to the line				P - solve linear inequalities in one variable			Sk - Solve problems involving prisms				Sk - Use graphs to solve equations			Sk - Explore graphs of other standard non-linear functions		
	P - Explore the effects of rounding				Sk - construct plans and elevations of 3D shapes				P - represent the solution set to an inequality on a number line			Sk - Investigate right-angled triangles				Sk - Solve problems involving simultaneous equations			Sk - Create and use graphs of non-standard functions		
												Pythagoras’ theorem							Sk - Solve kinematic problems		

Year 10 Foundation	Topic – Algebraic proficiency: tinkering S - understand and use the concepts and vocabulary of identities S - know the difference between an equation and an identity P - simplify and manipulate algebraic expressions by expanding products of two binomials and factorising quadratic expressions of the form $x^2 + bx + c$ Sk - argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments Sk - translate simple situations or procedures into algebraic expressions or formulae	Topic – Proportional reasoning Sk - Solve problems involving different types of proportion P - Investigate ways of representing proportion Sk - Understand and solve problems involving congruence Sk - Understand and solve problems involving similarity P - Know and use compound units in a range of situations	Topic – Pattern sniffing P - Investigate Fibonacci numbers P - Investigate Fibonacci type sequences P - Explore quadratic sequences	Topic – Conjecturing S - use the basic congruence criteria for triangles (SSS, SAS, ASA, RHS) Sk - apply angle facts, triangle congruence, similarity, and properties of quadrilaterals to conjecture and derive results about angles and sides, including Pythagoras' Theorem and the fact that the base angles of an isosceles triangle are equal, and use known results to obtain simple proofs	Topic – Algebraic proficiency: visualising I P - identify and interpret gradients and intercepts of linear functions algebraically P - use the form $y = mx + c$ to identify parallel lines P - find the equation of the line through two given points, or through one point with a given gradient P - interpret the gradient of a straight-line graph as a rate of change	Topic – Understanding risk P - Understand and use tree diagrams P - Develop understanding of probability in situations involving combined events Sk - Use probability to make predictions	Topic – Presentation of data Sk - Construct and interpret graphs of time series Sk - Interpret a range of charts and graphs Sk - Interpret scatter diagrams Sk - Explore correlation	
	Closed book assessment based on HT1 Non-calculator test HT2			Closed book assessment Y10 exams P1		Closed book Y10 exams P2		

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YEAR 10	Topic – Calculating		Topic – Investigating properties of shapes		Topic – Solving equations and inequalities I			Topic – Solving equations and inequalities II		Topic – Calculating space		Topic – Exploring fractions, decimals, and percentages		Topic – Solving equations and inequalities III		Topic – Understanding risk			
Higher	P - estimate powers and roots of any given positive number		P - Investigate similar triangles		P - Solve simultaneous equations			S - Understand and use set notation		P - Calculate surface areas of solids		S - Explore the links between recurring decimals and fractions		Sk - solve quadratic equations algebraically by factorising		P - Understand and use the product rule for counting			
	P - calculate with roots, and with integer and fractional indices		Sk - Explore trigonometry in right-angled triangles		Sk - Solve problems involving simultaneous equations			P - Solve inequalities		P - Calculate volumes of solids		Sk - Solve problems involving repeated percentage change		Sk - find approximate solutions to quadratic equations using a graph		P - Use Venn diagrams to represent probability situations			
	P - calculate exactly with surds		P - Set up and solve trigonometric equations					Sk - Represent inequalities on a graph		Sk - Solve problems involving enlargement and 3D shapes		Sk - Solve problems involving exponential growth and decay		Sk - deduce roots of quadratic functions algebraically		P - Use two-way tables to represent probability situations			
	Sk - apply and interpret limits of accuracy, including upper and lower bounds		Sk - Use trigonometry to solve practical problems													Sk - Solve probability problems involving combined events			
																P -			

[illegible]

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Year 11 Foundation	Topic – Calculating P- calculate with roots, and with integer indices		Topic – Investigating properties of shapes P- Investigate similar triangles S - Explore trigonometry in right-angled triangles Set up and solve trigonometric equations • Use trigonometry to solve practical problems				Topic – Solving equations and inequalities P - Solve simultaneous equations Sk - Solve problems involving simultaneous equations		Topic – Pattern sniffing P - recognise and use simple geometric progressions and other sequences		Topic – Calculating space P - Calculate surface areas of solids P - Calculate volumes of solids		Topic – Exploring fractions, decimals, and percentages P - Solve problems involving repeated percentage change Sk - Solve problems involving exponential growth and decay		Topic – Algebraic Proficiency: Visualising P – Identify and interpret roots, intercepts of quadratics graphically Sk – Identify turning points of quadratic functions graphically		Revision and GCSE exams							
	9	10	11	12	13	14	15	22	23	24	25	26												
Year 11 Foundation	Topic – Mathematical movement P - Explore enlargement of 2D shapes P - Investigate the transformation of 2D shapes		Topic – Algebraic proficiency: tinkering Sk - Manipulate algebraic expressions Sk - Change the subject of a formula			Topic – Proportional reasoning P - Explore differences between direct and inverse proportion P - Investigate ways of representing proportion in situation Sk - Solve problems involving proportion		Topic – Solving equations and inequalities P - solve quadratic equations algebraically by factorising P - find approximate solutions to quadratic equations using a graph Sk - deduce roots of quadratic		Topic – Analysing statistics S - Understand the limitations of sampling P - Use a sample to infer properties of a population		Topic – Mathematical movement II S - Understand the concept of a vector S - Know and use different notations for vectors, including diagrammatic representation P - Add and subtract vectors P - Multiply a vector by a scalar		Topic – Understanding Risk S – Apply product rule for counting P – Understand and use Venn Diagrams and Set Notation										

Year 11 Higher	Topic – Solving equations and inequalities P - solve quadratic equations by completing the square and by using the quadratic formula P - deduce turning points of quadratic functions by completing the square P - deduce roots of quadratic functions algebraically P - Find approximate solutions to complex equations using iteration Sk - work with general iterative processes	Topic – Mathematical movement P - Identify, describe, and construct similar shapes, including on coordinate axes, by considering enlargement (including negative scale factors)	Topic – Algebraic proficiency: tinkering P - interpret the succession of two functions as a 'composite function' P - interpret the reverse process as the 'inverse function'	Topic – Algebraic proficiency: visualising I S - Explore graphs of exponential functions S - Explore graphs of trigonometric functions Sk - Investigate the connections between graphs of functions and their translations P - Manipulate quadratic functions P - Solve problems involving graphs of quadratic functions Sk - Explore rates of change	Topic – Mathematical movement II Sk - use vectors to construct geometric arguments and proofs	
	Assessment- Y11 December Mock exams			Assessment- Y11 March Mock exams		