#### **Maths**

# Mathematics Mastery Curriculum Plan

5 year programme of study



#### Year 7 Autumn Mathematics

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
	Number sense Adding and subtracting		Time	Multiplying	Dividing	Measures
Y7 Term 1	Using number lines     Integer place value     Decimal place value     Ordering negative numbers     Rounding integers     Rounding decimals	<ul> <li>Adding integers</li> <li>Adding decimals</li> <li>Subtracting integers</li> <li>Subtracting decimals</li> </ul>	<ul> <li>Converting units of time</li> <li>Using clocks</li> <li>Calculating with time</li> <li>Using timetables</li> <li>Using calendars</li> </ul>	Multiplying and dividing by 10, 100 and 1000     Multiplying using place value     Using a written method to multiply integers     Using a written method to multiply decimals	<ul> <li>Dividing numbers into equal groups</li> <li>Using a written method to divide integers</li> <li>Dividing with remainder</li> <li>Using a written method to divide by integers to get a decimal answer</li> <li>Using a written method to divide by decimals</li> </ul>	<ul> <li>Estimating and measuring length, mass and capacity</li> <li>Converting units of length, mass and capacity</li> <li>Using appropriate units</li> </ul>
	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
	Negative Numbers	Order of operations	Expressions	Substitution	Solving Equations	Assessment/DIRT
Y7 Term 2	Adding and subtracting with negative numbers     Multiplying and dividing with negative numbers	Calculating with roots and powers     Using the correct order of operations     Using the commutative laws     Using the associative laws	<ul> <li>Algebraic notation</li> <li>Algebraic terminology</li> <li>Simplifying expressions containing a single variable</li> <li>Simplifying expressions containing multiple variables</li> <li>Simplifying expressions containing non-linear terms</li> </ul>	Substituting into expressions with one operation     Substituting into expressions with multiple operations     Substituting into algebraic formulae     Substituting into real-life formulae	<ul> <li>Solving equations with one step</li> <li>Solving equations of the form ax+b=c</li> <li>Solving equations of the form x/a+b=c</li> </ul>	

# Year 7 Spring Mathematics

_		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
		Line and Shape	Perimeter	Ar	ea	Co-ordinates	Factors, multiples and primes
	Y7 Term 3	<ul><li>Line properties</li><li>Shape properties</li><li>Symmetry</li></ul>	Finding perimeters using grids     Finding the perimeter of rectangles and simple shapes     Finding the perimeter of compound shapes	<ul> <li>Finding the area of rectangles</li> <li>Finding the area of compound shapes</li> </ul>		<ul> <li>Reading and plotting coordinates</li> <li>Solving shape problems involving coordinates</li> </ul>	Finding the lowest common multiple     Finding factors and using divisibility tests     Finding the highest common factor     Finding prime numbers     Prime factor decomposition
İ		Week 7	Week 8	Week 9	W1-40	Week 11	W 1.42
		VVCCK /	WEEK O	week 9	Week 10	Week 11	Week 12
			nparing fractions	Adding and subtracting fractions	Single brackets	Year 7 Spring Assessment	Angles

#### Year 7 Summer Mathematics

_		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
		Finding unknown angles	Averages and range	Tables and charts	Collecting and presenting data	Proportion word problems	Blank
	Y7 Term 5	<ul> <li>Angles on a line and about a point</li> <li>Vertically opposite angles</li> <li>Angles in triangles</li> </ul>	<ul> <li>Calculating the range</li> <li>Calculating the median</li> <li>Finding the mode</li> <li>Calculating the mean</li> </ul>	<ul> <li>Interpreting frequency tables and two-way tables</li> <li>Drawing and interpreting tally charts</li> <li>Drawing and interpreting pictograms</li> <li>Drawing bar charts</li> <li>Interpreting bar charts</li> </ul>	<ul> <li>Collecting and recording data using tables</li> <li>Finding averages from frequency tables</li> <li>Choosing suitable averages and solving problems</li> </ul>	Solving proportion problems	
İ		Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
	2	End of Year Assessment - Year 7	Multiplying and dividing fractions	Fractions of amounts	Fractions, decimals and percentages	Theoretical probability	Year 7 Summer Assessment
	Y7 Summer		Reciprocals     Multiplying fractions     Dividing fractions     Multiplying with mixed numbers     Dividing with mixed numbers	<ul> <li>Fractions of amounts without a calculator</li> <li>Fractions of amounts with a calculator</li> </ul>	Converting between fractions and decimals     Converting between fractions, decimals and percentages     Ordering fractions, decimals and percentages     Writing numbers as percentages of other numbers	<ul> <li>Using probability phrases</li> <li>Writing probabilities as fractions</li> <li>Writing probabilities as fractions, decimals and percentages</li> <li>Probabilities of mutually exclusive events</li> <li>Sample space diagrams</li> </ul>	

#### Year 8 Autumn Mathematics

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
	Percentages of amounts	Percentage change	Calculating with money	Index laws	Solving e	quations
$\vdash$	Finding percentages of	Percentage change without	<ul> <li>Value for money</li> </ul>	Index rules with positive	Solving equations of the form	
	<ul><li>amounts without a calculator</li><li>Finding percentages of</li></ul>	<ul><li>a calculator</li><li>Percentage change with a</li></ul>			<ul> <li>Solving linear equations involved</li> <li>Solving equations with the un</li> </ul>	_
erm	amounts with a calculator	calculator			Solving equations with the un	
l			Simplifying expressions		<ul> <li>Constructing and solving equal</li> </ul>	ations
H				<ul><li>using index laws</li><li>Simplifying algebraic</li></ul>		
λ				fractions by cancelling		
				common factors		
	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
	Term-to-term rules	Position-to-term rules	Ra	tio	Scale diagrams	Year 8 Autumn Assessment
2	Term-to-term rules for	• Substituting into position-	Writing and simplifying ratios		Drawing and interpreting	
	numerical sequences  Term-to-term rules for	to-term rules  • Position-to-term rules for	<ul><li>Writing ratios in the form 1:n</li><li>Converting between ratios, from</li></ul>		scale diagrams	
rr	sequences of patterns	arithmetic sequences	<ul> <li>Using equivalent ratios to find</li> </ul>			
Term	·	• Position-to-term rules for	Sharing amounts in a given ra			
		sequences of patterns				
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# Year 8 Spring Mathematics

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
	Rounding - Significant	Coordinates and	Area and units	Area and circumference	Standard form and	Venn diagrams
	figures	midpoints			ordinary numbers	
3	Rounding integers using	Calculating midpoints	• Finding the area of	Identifying parts of circles	Using standard form with	Venn diagrams
$\sqsubset$	significant figures	Mixed problems:  Coordinates and midneints	parallelograms  • Finding the area of	<ul> <li>Finding the circumference of circles</li> </ul>	positive indices	Probabilities from Venn  diagrams
	<ul> <li>Rounding decimals using significant figures</li> </ul>	Coordinates and midpoints	<ul> <li>Finding the area of trapeziums</li> </ul>	Finding the area of circles	<ul> <li>Using standard form with negative indices</li> </ul>	diagrams
Term	Estimating calculations		Converting units of area	- Tilluling the area of cheles	negative malees	
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	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
	Week 7 Factors, multiples and				Plotting graphs and	
	Factors, multiples and primes	2D shape - Nets	Surface area	Volume	Plotting graphs and finding equations	Transforming shapes
4	Factors, multiples and primes  • Finding the HCF and LCM	2D shape - Nets • Properties of 3D shapes	Surface area  • Finding the surface area	Volume • Finding the volume of cubes	Plotting graphs and finding equations  • Plotting horizontal, vertical	Transforming shapes  • Translation
	Factors, multiples and primes  • Finding the HCF and LCM using prime factor	2D shape - Nets	Surface area  • Finding the surface area from a net	• Finding the volume of cubes and cuboids	Plotting graphs and finding equations  • Plotting horizontal, vertical and diagonal lines	Transforming shapes
	Factors, multiples and primes  • Finding the HCF and LCM	2D shape - Nets • Properties of 3D shapes	• Finding the surface area from a net • Finding the surface area of	Volume  • Finding the volume of cubes and cuboids • Finding the volume of	Plotting graphs and finding equations  • Plotting horizontal, vertical and diagonal lines • Plotting straight line graphs	Transforming shapes  • Translation
erm	Factors, multiples and primes  • Finding the HCF and LCM using prime factor	2D shape - Nets • Properties of 3D shapes	• Finding the surface area from a net • Finding the surface area of cubes and cuboids	• Finding the volume of cubes and cuboids • Finding the volume of prisms	Plotting graphs and finding equations  • Plotting horizontal, vertical and diagonal lines  • Plotting straight line graphs • Finding equations of straight	Transforming shapes  • Translation
	Factors, multiples and primes  • Finding the HCF and LCM using prime factor	2D shape - Nets • Properties of 3D shapes	• Finding the surface area from a net • Finding the surface area of	Volume  • Finding the volume of cubes and cuboids • Finding the volume of	Plotting graphs and finding equations  • Plotting horizontal, vertical and diagonal lines • Plotting straight line graphs	Transforming shapes  • Translation
Term	Factors, multiples and primes  • Finding the HCF and LCM using prime factor	2D shape - Nets • Properties of 3D shapes	• Finding the surface area from a net • Finding the surface area of cubes and cuboids • Finding the surface area of	• Finding the volume of cubes and cuboids • Finding the volume of prisms	Plotting graphs and finding equations  • Plotting horizontal, vertical and diagonal lines  • Plotting straight line graphs • Finding equations of straight	Transforming shapes  • Translation
erm	Factors, multiples and primes  • Finding the HCF and LCM using prime factor	2D shape - Nets • Properties of 3D shapes	• Finding the surface area from a net • Finding the surface area of cubes and cuboids • Finding the surface area of	• Finding the volume of cubes and cuboids • Finding the volume of prisms	Plotting graphs and finding equations  • Plotting horizontal, vertical and diagonal lines  • Plotting straight line graphs • Finding equations of straight	Transforming shapes  • Translation
Term	Factors, multiples and primes  • Finding the HCF and LCM using prime factor	2D shape - Nets • Properties of 3D shapes	• Finding the surface area from a net • Finding the surface area of cubes and cuboids • Finding the surface area of	• Finding the volume of cubes and cuboids • Finding the volume of prisms	Plotting graphs and finding equations  • Plotting horizontal, vertical and diagonal lines  • Plotting straight line graphs • Finding equations of straight	Transforming shapes  • Translation

#### Year 8 Summer Mathematics

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
	Finding unk	nown angles	Drawing and interpret	ing statistical diagrams	Linear inequalities	Double brackets
Y8 Term 5	<ul> <li>Angles in quadrilaterals</li> <li>Combining angle facts</li> <li>Angles on parallel lines</li> <li>Using quadrilateral properties</li> <li>Angles in polygons</li> </ul>	s to find angles	<ul> <li>Drawing pie charts</li> <li>Drawing line graphs</li> <li>Interpreting line graphs</li> <li>Drawing stem-and-leaf diagrams</li> <li>Interpreting stem-and-leaf diagrams</li> <li>Finding averages from diagrams</li> </ul>		<ul> <li>Reading and drawing linear inequalities on number lines</li> <li>Solving single inequalities</li> </ul>	Expanding double brackets
	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
	Fractions review	Algebraic	fractions	Fractions and re	curring decimals	Year End of Term Assessment
Y8 Term 6	Calculating with fractions     Calculating with mixed numbers	Simplifying algebraic fractions     Adding and subtracting algeb		Using recurring decimal notate     Converting fractions to recurr		

#### Year 9 Autumn Mathematics

_		Week 1	We	ek 2	Week 3	Week 4	We	ek 5	Week 6	
		Fractions, decimals ar	nd percentages	review	Percentage change	Theoretical and	Calculat	ons with	Linear inequalities	
		Percentag	ge change			experimental probability	standa	rd form		
	$\vdash$	Converting between fractions	s, decimals and p	ercentages	Percentage change without	• Expected results from	Multiplying	and dividing	Solving inequalities with the	
		Ordering fractions, decimals a	and percentages		a calculator	repeated experiments	numbers in sta	ndard form	unknown on both sides	
		<ul> <li>Finding fractions of amounts without a calculator</li> <li>Finding fractions of amounts with a calculator</li> <li>Finding percentages of amounts without a calculator</li> <li>Finding percentages of amounts with a calculator</li> </ul>		Percentage change with a	<ul> <li>Calculating experimental</li> </ul>	<ul> <li>Adding ar</li> </ul>	d subtracting	Solving double inequalities		
				calculator	probabilities	numbers in sta	ndard form	Constructing and solving		
	Term			Finding original values in	<ul> <li>Frequency trees</li> </ul>	<ul> <li>Standard</li> </ul>	form with a	inequalities		
				percentage calculations		calculator				
	γ9			Finding the percentage an						
				amount has been changed by						
					Simple interest calculations					
		Week 7	We	ek 8	Week 9	Week 10	Wee	k 11	Week 12	
		Factorising and solving	quadratic	Pos	arranging formulae	Constructing bisectors and		Cir	Circles and cylinders	
		equations		Nes	irranging formulae	perpendicular lines				
	2	Factorising quadratic equation	ons of the form	Changing the	subjects of formulae with one	<ul> <li>Constructing bisectors of ang</li> </ul>		<ul> <li>Finding the a</li> </ul>	rc length of sectors	
		x^2+bx+c		step		Constructing perpendicular bisectors and		<ul> <li>Finding the a</li> </ul>		
	erm	<ul> <li>Factorising the difference of t</li> </ul>			e subjects of formulae with two	lines		_	urface area of cylinders	
		Factorising to solve quadration	ic equations of	or more steps				• Finding the v	olume of cylinders	
	T	the form x^2+bx+c=0								
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# Year 9 Spring Mathematics

_		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
		Error intervals	Representations of 3D	Pythagoras' th	neorem in 2D	Ratio	Proportion word
- [			shapes				problems
	$\sim$	Finding error intervals	Plans and elevations	Using Pythagoras' theorem in		Writing and simplifying	Solving direct proportion
	E	<ul><li>Truncating decimals</li><li>Finding error intervals for</li></ul>		11 7 8 7 8		<ul><li>ratios</li><li>Sharing amounts in a given</li></ul>	<ul><li>word problems</li><li>Solving inverse proportion</li></ul>
	<u> </u>	truncated numbers				ratio	word problems
	Term			'			Currency conversion
	<del>\</del> <del>\</del> <del>\</del> <del>\</del> <del>\</del> <del>\</del> <del>\</del> <del>\</del> <del>\</del> <del>\</del>						
		Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
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			d finding equations	Speed ar	nd rates		ime graphs
	4	<ul><li>Plotting straight line graphs</li><li>Finding equations of straight</li></ul>	lino granhs	<ul><li>Calculating with speed</li><li>Calculating with rates</li></ul>		<ul><li>Plotting distance-time graphs</li><li>Interpreting distance-time graphs</li></ul>	
		Interpreting equations of straight		- Calculating with rates		Calculating speed from distant	-
		and proming of an area or on a				Plotting distance-time graphs	
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	Term						
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#### Year 9 Summer Mathematics

	Week 1 Week 2		Week 3	Week 4	Week 5	Week 6
Y9 Term 5	Plotting and interpreting quadratic graphs  • Plotting graphs of quadratic functions • Interpreting graphs of quadratic functions • Solving quadratic equations graphically		Angles  Combining angle facts Angles on parallel lines Using quadrilateral properties to find angles Angles in polygons	Bearings     Measuring and drawing bearings     Calculating bearings	• Transform • Translation • Reflection • Rotation • Enlargement by a positive sca • Mixed transformations	ing shapes
	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
	Similarity	Congruence	Scatter graphs	Collecting and presenting data	Grouped data	Column vectors
Y9 Term 6	Understanding similarity     Finding unknown sides in similar shapes	<ul> <li>Understanding congruence</li> <li>Congruent triangles</li> <li>Constructing triangles</li> </ul>	<ul> <li>Plotting scatter graphs</li> <li>Interpreting scatter graphs</li> <li>Using lines of best fit</li> </ul>	Types of data Presenting data and making conclusions Comparing populations using diagrams Choosing suitable averages and solving problems	<ul> <li>Interpreting frequency tables with grouped data</li> <li>Finding averages from grouped data</li> <li>Drawing and interpreting frequency polygons</li> </ul>	Understanding column vectors     Adding and subtracting column vectors     Multiplying column vectors by a scalar     Identifying parallel vectors

## Mathematics 'Cross Over' (Foundation) Curriculum Overview Year 10

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
$\vdash$	Two Way Tables & Frequency Trees	Rounding, Error Intervals & Estimation	Calculator Use & Product of Primes/HCF/LCM	Real Life Multiples	Fractions	Ratio	Direct Proportion
Y10 Term	way tables  • Design tables from word problems  • Calculate probabilities from tables  • Interpret and construct	places/significant figures • Use inequality notation for error intervals • Estimate calculations using rounding	correctly  • Apply order of operations  • Prime factor	multiples • Solve contextual LCM problems		-	Solve problems using unitary method     Use graphs and equations to model proportion

	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
2	Proportion – Best Value, Recipes, Exchange Rate	Assessment	Inverse Proportion	Percentages	Interest, Growth and Decay	Reverse Percentages	Index Laws
L	<ul> <li>Compare value for money</li> <li>Scale recipes</li> <li>Convert currencies</li> </ul>		problems  Use graphs to interpret	change	percentage change  Solve growth/decay	<ul> <li>Find original values from final amounts</li> <li>Apply in sale and tax contexts</li> </ul>	I• Apply laws of indices • Simplify expressions with powers

	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20
	Expand and Simplify	Sequences	Assessment	Inequalities	Solving Equations	Forming and Solving Equations
. H	expressions • Expand brackets	Recognise and generate sequences Use nth term rules Distinguish types		inequalities	•	Model real-life problems with equations     Solve using algebra

	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
	Factorising	Changing the Subject	Standard Index Form	Angles in Parallel Lines	Interior and Exterior Angles	Plans and Elevations
Y10 Term 4	Factorise expressions     Solve quadratics     Use difference of squares	Rearrange formulae     Solve for specific variables	Convert between standard and ordinary form     Perform operations in standard form	<ul> <li>Justify reasoning with</li> </ul>	<ul> <li>Calculate angles in polygons</li> <li>Use angle sums and properties</li> </ul>	• Draw and interpret 2D views of 3D shapes

	Week 27	Week 28	Week 29	Week 30	Week 31
	Constructions and Loci	Bearings	Pythagoras	SOH CAH TOA	Circles, Arcs and Sectors
10 Term 5	Perform geometric constructions     Solve loci problems	Use scale diagrams and bearings     Solve directional problems	Apply Pythagoras' Theorem	S	Calculate area and circumference     Solve problems with sectors and arcs
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	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	Week 38
	Surface Area and Volume	Mock Examinations	Mock Examinations	Sampling	Averages	Averages from Table/Grouped Data	Regatta Week
Y10 Term 6	Calculate surface area and volume of 3D shapes     Convert units     Solve compound problems			Understand data types     Minimize bias     Evaluate sample reliability	mode, range	Estimate mean from grouped data     Identify modal class and median interval	

#### Mathematics 'Cross Over' (Foundation) Curriculum Overview Year 11

	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Standard Index Form	<b>Cumulative Frequency</b>	Histograms	Histograms – CF Mean	Further Trigonometry	Further Trigonometry	Graphs of Trig
	and Box Plots		and Histograms			Functions
Convert numbers to	Construct and interpret	<ul> <li>Construct histograms;</li> </ul>	Estimate mean from	<ul> <li>Apply sine and cosine</li> </ul>	<ul> <li>Apply sine and cosine</li> </ul>	<ul> <li>Sketch and interpret trig</li> </ul>
and from standard form;	cumulative frequency	estimate mean and	grouped data using	rules; solve 2D and 3D	rules; solve 2D and 3D	graphs; apply
perform calculations.	graphs and box plots.	interpret frequency	cumulative frequency	problems.	problems.	transformations.
		density.	and histograms.			
	Convert numbers to and from standard form;	and Box Plots     Convert numbers to and from standard form;     and mulative frequency	<ul> <li>Convert numbers to and from standard form; perform calculations.</li> <li>and Box Plots</li> <li>Construct and interpret cumulative frequency graphs and box plots.</li> <li>Construct histograms; estimate mean and interpret frequency</li> </ul>	<ul> <li>Convert numbers to and from standard form; perform calculations.</li> <li>and Box Plots</li> <li>Construct and interpret cumulative frequency graphs and box plots.</li> <li>Construct histograms; estimate mean and interpret frequency cumulative frequency</li> </ul>	<ul> <li>and Box Plots</li> <li>Convert numbers to and from standard form; perform calculations.</li> <li>Construct and interpret cumulative frequency graphs and box plots.</li> <li>Construct histograms; estimate mean and interpret frequency graphs and box plots.</li> <li>Estimate mean from grouped data using cumulative frequency cumulative frequency problems.</li> </ul>	<ul> <li>Convert numbers to and from standard form; perform calculations.</li> <li>Construct and interpret cumulative frequency graphs and box plots.</li> <li>Construct histograms; estimate mean and interpret frequency graphs and box plots.</li> <li>Construct histograms; estimate mean from grouped data using cumulative frequency frequency cumulative frequency problems.</li> <li>Apply sine and cosine rules; solve 2D and 3D problems.</li> </ul>

	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
	MOCKS	MOCKS	Similarity in 2D and	Speed, Distance, Time,	Non-Linear Graphs	Using Graphs of Circles,	Gradient and Area
7			3D	Compound Measures		Cubes, Quadratics	Under Graphs
Y11 Term			Use scale factors to solve problems involving similar shapes.	Solve problems involving compound measures.	Sketch and interpret quadratic, cubic, and reciprocal graphs.	Use graphs to solve equations and interpret real-life contexts.	Estimate gradients and areas under curves; interpret in context.

	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20
2	Circle Geometry –	Functions	Algebraic Proof		Vectors	Vectors
n 3	• Find equations of tangents;	Use function notation; find	Use algebra to prove	Prove congruence and	Use vector notation; solve	Use vector notation; solve
err	understand gradient relationships.	inverse and composite functions.	identities and solve "show that" problems.	similarity; solve angle problems formally.	geometric problems; prove parallelism and collinearity.	geometric problems; prove parallelism and collinearity.
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	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
4	MOCKS	MOCKS	DIRT	DIRT	Bespoke Following Mock	Bespoke Following Mock
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2	Paper 1
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#### Mathematics 'Working Above' (Higher) Curriculum Overview Year 10

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
	Ratio	Direct Proportion	Proportion: Best	Inverse Proportion	Simultaneous	Percentages and	Interest, Growth,
$\exists$			Value, Recipes,		Equations (Linear)	Reverse Percentages	Depreciation, Decay
			Exchange Rates				
0 Te	<ul> <li>Solve ratio problems including sharing and comparing quantities.</li> </ul>	<ul> <li>Solve direct proportion problems using equations and graphs.</li> </ul>	Apply proportion to real-life contexts including best buys and	Solve inverse proportion problems algebraically and	Solve linear systems using substitution and elimination.	Calculate percentage change and reverse percentages.	Apply percentage multipliers to growth and decay problems.
Y1(	companing quantities.	απα βιαμπίς.	currency conversion.	graphically.	elitiliation.	percentages.	decay problems.

7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
	Rearranging Equations	Assessment	Fractional/Negative	Recurring Fractions	Averages	Upper and Lower	Surds Including
			Indices/Index Laws			Bounds	Rationalising
<u></u>	<ul> <li>Change the subject of a</li> </ul>		Use index laws with	<ul> <li>Convert between</li> </ul>	Calculate mean,	<ul> <li>Calculate bounds and</li> </ul>	<ul> <li>Simplify surds and</li> </ul>
	formula, including		fractional and negative	fractions and recurring	median, mode, and	apply them to problem-	rationalise denominators.
	complex rearrangements.		powers.	decimals.	range.	solving contexts.	
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		Week 15		Week 16	Week 17	Week 18	Week 19	Week 20
$\sim$	)	Surds	Including	Expanding and Factorising	Assessment	Algebraic Fractions	Algebraic Fractions	Pythagoras and SOH CAH
3		Rationalising						TOA Recap
V10 Ter	) - )	Simplify surds an rationalise denoming		Expand brackets and factorise expressions including quadratics.		Simplify and solve equations involving algebraic fractions.	Simplify and solve equations involving algebraic fractions.	Apply Pythagoras' Theorem and trigonometric ratios.

	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
4	Straight Line Graphs	Coordinate Geometry	Surface Area and Volume –	Surface Area and Volume –	Transformations	Transformations
$\subseteq$			Cylinders, Cones, Spheres,	Cylinders, Cones, Spheres,		
			Frustums	Frustums		
.a	<ul> <li>Find and interpret equations</li> </ul>	<ul> <li>Use coordinates to solve</li> </ul>	<ul> <li>Solve problems involving</li> </ul>	<ul> <li>Solve problems involving</li> </ul>	Perform and describe	Perform and describe
	of straight lines.	geometric problems.	surface area and volume.	surface area and volume.	combined transformations.	combined transformations.
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		Week 27	Week 28	Week 29	Week 30	Week 31
L	<b>L</b>	Circle Theorems	Circle Theorems	Simultaneous Equations	Probability from Cross Over	Probability from Cross Over
				(Quadratic)		
		• Apply circle theorems to find angles	• Apply circle theorems to find angles	Solve systems involving linear and	• Use Venn diagrams, tree diagrams,	• Use Venn diagrams, tree diagrams,
	Φ	and justify reasoning.	and justify reasoning.	quadratic equations.	and tables to calculate probabilities.	and tables to calculate probabilities.
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	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	Week 38
9	Conditional	MOCKS	MOCKS	Quadratics Including	Direct and Inverse	Angles in Parallel	Bearings
$\equiv$	Probability			Formula and	Proportion	Lines, Interior and	
				Iteration		Exterior Angles	
$\vdash$							
Y10	Calculate conditional probabilities using structured diagrams.			Solve quadratics using formula and iterative methods.	Solve problems involving proportional relationships.	Use angle rules to solve problems involving parallel lines and	Solve bearing problems using angle rules and trigonometry.
						polygons.	

## Mathematics 'Working Above' (Higher) Curriculum Overview Year 11

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
	Standard Index Form	Cumulative frequency and box plots	Histograms		Further trigonometry		Graphs of Trig functions
Y11 Term 1	<ul> <li>Convert between ordinary numbers and standard form.</li> <li>Add, subtract, multiply, and divide numbers in standard form.</li> <li>Compare and order numbers using index form and interpret or enter standard form on a calculator.</li> </ul>	Create and interpret cumulative frequency tables and graphs     Use graphs to:     -Estimate frequencies above or below specific values.     Determine median, quartiles, and interquartile range.	histograms.  Construct and interpequal and unequal clae  Understand and used density to estimate stother mean and median  Complete and interpersions.	<ul> <li>Recognise and apply appropriate uses of histograms.</li> <li>Construct and interpret histograms for both equal and unequal class intervals.</li> <li>Understand and use the concept of frequency density to estimate statistical measures such as the mean and median.</li> <li>Complete and interpret grouped frequency tables linked to histogram data.</li> </ul>		e and area rules to solve ns involving triangles. Theorem and s in right-angled and Tiangles. , angles and diagonals ling cuboids.	•Recognise and interpret the graphs of sine, cosine and tangent for any angle. •Recall and use exact trigonometric values for key angles (0°, 30°, 45°, 60°, 90°) •Apply transformations such as reflections and translations to trigonometric functions.

	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
2	MOCKS		Similarity in 2D and 3D	Speed, Distance, Time and Compound Measures			
Y11 Term			Understand and use similarity in shapes to solve problems.     Describe and calculate enlargements using scale factors.     Work out missing lengths, areas, and volumes in similar shapes and solids.     Apply these ideas to cones and frustums.	and speed. Conve and imperial spee speed, distance, a average speed. U formulas for spee	density, pressure, ert between metric ed units. Calculate and time, including	Sketch and interpret quadratic, cubic, and linear graphs, identifying roots, intercepts, turning points, and intersections.  Use graphs to find approximate solutions to equations and inequalities.  Solve simultaneous equations and inequalities graphically, including reallife problems and intersections with circles.	Interpret and sketch reciprocal and exponential graphs, identifying where functions are undefined  Explore and solve growth and decay problems.  Estimate areas under curves using trapezia.

	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20
	Circle Geometry - gradients and tangents	Functions	Algebraic Proof	Congruence and geometric proof	Vectors	Vectors
Y11 Term 3	<ul> <li>Use constructions and loci to draw graphs involving circles and perpendiculars.</li> <li>Recognise and plot circles with equation x² + y² = r².</li> <li>Find the equation of a tangent to a circle at a given point using gradients of the radius and tangent.</li> </ul>	•Use and manipulate function notation, including combining, scaling, and finding inverses of functions. •rite ratios as linear functions. Apply and describe transformations of function graphs (reflections, translations, and shifts) for linear, quadratic, and cubic functions.	Solve and write proofs using algebraic expressions for integers (n, n+1), even and odd numbers, and squares. Apply these methods to prove results in contexts such as area, perimeter, and volume.	•Understand and prove that the angles in a triangle sum to 180°. •Use formal proofs to show similarity and congruence in triangles (SSS, SAS, ASA, RHS) and apply these to solve angle problems.		or notation, including column and interpret vectors as an associated direction.

	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
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	Week 27	Week 28	Week 29	Week 30
m 4	Bespoke Following Mock	Bespoke Following Mock	Bespoke Following Mock	Paper 1
Term				
Y11				