

GCSE Maths Year 10 (Foundation) Curriculum Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Similarity						Developing Algebra					
	Congruence, similarity and enlargement			Trigonometry			Representing solutions of equations and inequalities			Simultaneous equations		
Spring	Geometry						Proportions and Proportional Change					
	Angles & bearings		Working with circles		Vectors		Ratios & fractions		Percentages and Interest		Probability	
Summer	Delving into data				Using number				Expressions			
	Collecting, representing and interpreting data				Non-calculator methods		Types of number and sequences		Indices and Roots		Manipulating expressions	

	Autumn		Spring		Summer	
	Learning Cycle 1	Learning Cycle 2	Learning Cycle 3	Learning Cycle 4	Learning Cycle 5	Learning Cycle 6
Topic	Similarity	Developing Algebra	Geometry	Proportions & proportional change	Delving into data Using Number	Using Numbers Expressions
Critical Prior Knowledge	Year 9 learning cycle 2 – explore congruency Year 8 learning cycle 2- work with scale factors Year 9 learning cycle 4 – Pythagoras’ theorem	Year 9 learning cycle 1 – form & solve equations & inequalities with unknowns on both sides, simplify & Year 9 learning cycle 6 – representing inequalities	Year 9 learning cycle 4 – chains of reasoning to find angles Year 10 learning cycle 1 – revisit shape names & properties Year 8 learning cycle 6 – angles in parallel lines, area of a circle Year 8 learning cycle 1 – circumference of a circle	Year 8 learning cycle 1 – understand & use ratio notation Year 9 learning cycle 2- fraction consolidation Year 9 learning cycle 3 – financial maths Year 9 learning cycle 6 – conversion graphs	Year 9 learning cycle 6 – consolidation of representing & interpreting data	Year 9 learning cycle 4 - revisit fraction arithmetic Year 8 learning cycle 4 – rounding Year 9 learning cycle 3 – HCF, LCM, Year 9 learning cycle 6 – standard form, prime factorisation
Overall Intent (Big ideas & key concepts)	Congruence, similarity & enlargement <i>Trigonometry</i>	Representing solutions of equations & inequalities	Angles & bearing <i>Working with circles</i> Vectors	Ratios & fractions <i>Percentages & interest</i> Probability	Collecting, representing & interpreting data <i>Non-calculator methods</i>	Types of number & sequence <i>Indices</i>

	Autumn		Spring		Summer	
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Topic	Similarity	Developing Algebra	Geometry	Proportions & proportional change	Delving into data Using Number	Using Numbers Expressions
		<i>Simultaneous equations</i>				Manipulating expressions
Essential Knowledge milestones (What students must master)	<p>Enlarge a shape by a positive integer scale factor (R)</p> <p>Enlarge a shape by a fractional scale factor (R)</p> <p>Identify similar shapes</p> <p>Work out missing sides & angles in a pair given similar shapes (R)</p> <p>Use parallel line rules to work out missing angles</p> <p>Establish a pair of triangles are similar</p>	<p>Understand the meaning of a solution</p> <p>Form & solve one-step & two-step equations (R)</p> <p>Form & solve one-step & two-step inequalities (R)</p> <p>Show solutions to inequalities on a number line</p> <p>Interpret representations on number lines as inequalities</p> <p>Interpret representations on number lines as inequalities</p>	<p>Use cardinal directions & related angles (R)</p> <p>Draw & interpret scale diagrams (R)</p> <p>Understand & represent bearings</p> <p>Measure & read bearings</p> <p>Make scale drawings using bearings</p> <p>Calculate bearings using angles rules</p> <p>Solve bearings problems using Pythagoras & trigonometry</p>	<p>Compare quantities using ratio (R)</p> <p>Link ratios & fractions (R)</p> <p>Share in a ratio (given total or one part) (R)</p> <p>Using ratios & fractions to make comparisons</p> <p>Link ratios & graphs (R)</p> <p>Solve problems with currency conversion</p> <p>Link ratios & scales (R)</p>	<p>Understand populations & samples</p> <p>Primary & secondary data</p> <p>Construct & interpret frequency tables & frequency polygons</p> <p>Construct & interpret two-way tables (R)</p> <p>Construct & interpret line & bar charts (including composite bar charts)</p> <p>Construct & interpret pie charts (R)</p>	<p>Understand the difference between factors & multiples (R)</p> <p>Understand primes & express a number as a product of its prime factors (R)</p> <p>Find the HCF & LCM of a set of numbers (R)</p> <p>Describe & continue arithmetic & geometric sequences</p> <p>Explore other sequences</p>

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Topic	Similarity	Developing Algebra	Geometry	Proportions & proportional change	Delving into data Using Number	Using Numbers Expressions
	<p>Understand the difference between congruence & similarity</p> <p>Understand the difference between congruence & similarity</p> <p>Understand & use conditions for congruent triangles</p> <p><i>Explore ratio in similar right-angled triangles</i></p> <p><i>Work fluently with hypotenuse, opposite & adjacent sides</i></p> <p><i>Use the tangent ratio to find missing side lengths</i></p>	<p>Draw straight line graphs (R)</p> <p>Find solutions to equations using straight line graphs</p> <p>Form & solve equations with unknowns on both sides (R)</p> <p>Form & solve inequalities with unknown on both sides</p> <p>Form & solve more complex equations & inequalities</p> <p><i>Understand that equations can have more than one solution</i></p>	<p><i>Recognise & label parts of a circle (R)</i></p> <p><i>Calculate fractional parts of a circle</i></p> <p><i>Calculate the length of an arc</i></p> <p><i>Calculate the area of a sector</i></p> <p><i>Understand & use the volume of a cylinder & cone</i></p> <p><i>Understand & use the volume of a sphere</i></p> <p><i>Understand & use the surface area of sphere</i></p> <p><i>Understand & use the surface area of a cylinder & cone</i></p>	<p>Use & interpret ratios of the form 1:n & n:1</p> <p>Solve 'best buy' problems</p> <p>Combine a set of ratios</p> <p>Link ratio & algebra</p> <p>Mixed ratio problems</p> <p><i>Convert & compare fractions, decimals & percentages (R)</i></p> <p><i>Work out percentages of amounts (with & without a calculator (R))</i></p>	<p>Criticise charts & graphs</p> <p>Find & interpret averages from a list (R)</p> <p>Find & interpret averages from a table (R)</p> <p>Construct & interpret time series graphs (R)</p> <p>Construct & interpret stem-and-leaf diagrams</p> <p>Compare distributions using charts & measures</p> <p>Construct & interpret scatter graphs (R)</p>	<p>Find the rule for the nth term of linear sequence (R)</p> <p><i>Square & cube numbers (R)</i></p> <p><i>Calculate higher powers & roots</i></p> <p><i>Powers of ten & standard form. (R)</i></p> <p><i>The addition & subtraction rules for indices (R)</i></p> <p><i>Understand & use the power zero & negatives indices</i></p> <p><i>Work with powers of powers</i></p> <p><i>Calculate with numbers in standard form (R)</i></p>

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	<p><i>Use the sine & cosine ratio to find missing side lengths</i></p> <p><i>Use sine, cosine & tangent to find missing side lengths</i></p> <p><i>Use sine, cosine & tangent to find missing angles</i></p> <p><i>Calculate sides in right-angled triangles using Pythagoras' Theorem (R)</i></p> <p><i>Select the appropriate method to solve right-angled triangle problems</i></p> <p><i>Work with key angles in right-angled triangles</i></p>	<p><i>Determine whether a given (x,y) is a solution to a pair of linear simultaneous equations</i></p> <p><i>Solve a pair of linear simultaneous equations by substituting a known variable</i></p> <p><i>Solve a pair of linear simultaneous equations by substituting an expression</i></p> <p><i>Solve a pair of linear simultaneous equations by using graphs</i></p> <p><i>Solve a pair of linear simultaneous equations by</i></p>	<p>Understand & represent vectors</p> <p>Use & read vector notation</p> <p>Draw & understand vectors multiplied by a scalar</p> <p>Draw & understand addition of vectors</p> <p>Draw & understand addition & subtraction of vectors</p>	<p><i>Increase & decrease by a given percentage (R)</i></p> <p><i>Express one number as a percentage of another (R)</i></p> <p><i>Calculate simple & compound interest</i></p> <p><i>Repeated percentage change</i></p> <p><i>Find the original value after a percentage change (R)</i></p> <p><i>Solve problems involving growth & decay</i></p> <p><i>Solve problems involving</i></p>	<p>Draw & use a line of best (R)</p> <p>Understand extrapolation</p> <p><i>Mental/written methods of integer/decimal addition & subtraction (R)</i></p> <p><i>Mental/written methods of integer/decimal multiplication & division (R)</i></p> <p><i>The four rules of fractions arithmetic (R)</i></p> <p><i>Exact answers</i></p>	<p>Simplify algebraic expressions (R)</p> <p>Use identities</p> <p>Form & solve equations & inequalities with fractions</p> <p>Represent numbers algebraically</p> <p>Algebraic arguments & proof</p>

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Topic	Similarity	Developing Algebra	Geometry	Proportions & proportional change	Delving into data Using Number	Using Numbers Expressions
		<i>subtracting equations</i> <i>Solve a pair of linear simultaneous equations by adding equations</i> <i>Use a given equation to derive related facts (R)</i> <i>Solve a pair of linear simultaneous equations by adjusting one equation</i> <i>Solve a pair of linear simultaneous equations by adjusting both equation</i> <i>Form a pair of linear simultaneous</i>		<i>percentages, ratio & fractions</i> Know how to add, subtract & multiply fractions (R) Find probabilities using equally likely outcomes (R) Use the property that probabilities sum to 1 (R) Using experimental data to estimate probabilities Find probabilities from tables, Venn diagrams & frequency trees Construct & interpret samples	<i>Rounding to decimals places & significant figures (R)</i> <i>Estimating answers to calculations (R)</i> <i>Understand & use limits of accuracy</i> <i>Use number sense</i> <i>Solve financial maths problems</i> <i>Break down & solve multi-step problems</i>	

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		<i>equations from given information</i> <i>Form & solve a pair of linear simultaneous equations from given information</i>		spaces for more than one event (R) Use tree diagrams for independent events Use tree diagrams for dependent events		
Cultural Capital	Year 10 Enriching mathematics 1	Year 10 Enriching mathematics 2	Year 10 Enriching mathematics 3	Year 10 Enriching mathematics 4	Year 10 Enriching mathematics 5	Year 10 Enriching mathematics 6
Mode of Retrieval	Flashback starters Combined unit tests; knowledge & application covering the previous 2 units	Formal assessment of Summer Term (Yr 9) – application of knowledge	Flashback starters Combined unit tests; knowledge & application covering the previous 2 units	Formal assessment of Autumn Term – application of knowledge	Flashback starters Combined unit tests; knowledge & application covering the previous 2 units	Formal assessment of Spring Term – application of knowledge
ECC Student Characteristics	<p>Always endeavour to show resilience. Be aspirational. Be knowledgeable & able to deeply understand & recall information easily & be skilled in applying this knowledge in a range of circumstances. Have confidence & communicate effectively Know how to behave well & respect other members of our community when sharing ideas remembering to be mutually tolerant & empathetic</p>					

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Connection to future learning (When is this developed / revisited)?	Year 11 learning cycle 2 Year 11 learning cycle 3	Year 11 learning cycle 2	Year 11 learning cycle 2 Year 11 learning cycle 4	Year 11 learning cycle 3 Year 11 learning cycle 2	Year 11 learning cycle 4	Year 11 learning cycle 2 Year 11 learning cycle 3 Year 11 learning cycle 4