Mathematics Mastery

KS3 Curriculum Maps

Curriculum Mastery + Development

Year 7

	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	**Making generalisations about the number system 1**						**Making generalisations about the number system 2**					
	Numbers and numerals	Axioms and arrays		Factors and multiples		Order of operations	Positive and negative numbers			Expressions, equations and inequalities		
Spring	**2-D geometry**						**The Cartesian plane**					
	Angles		Classifying 2-D shapes		Constructing triangles and quadrilaterals		Coordinates		Area of 2-D shapes		Transforming 2-D figures	
Summer	**Fractions**						**Ratio and proportion**					
	Prime factor decomposition		Conceptualising and comparing fractions		Manipulating and calculating with fractions			Ratio		Percentages		

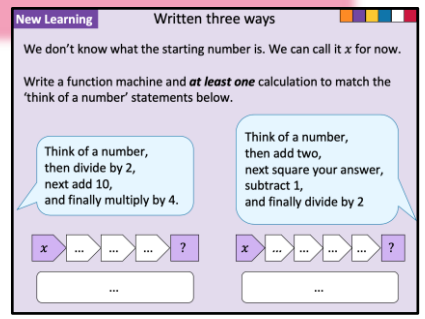
Year 7 (detailed)

	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	**Making generalisations about the number system 1**						**Making generalisations about the number system 2**					
	Number systems and the axioms • Place value systems including base 10 and other bases • Commutativity, associativity and distributivity			**Factors and multiples and order of operations** • Factors, primes and multiples • Square and cube numbers • Representing the structure of number • Establishing the order of operations			**Positive and negative numbers** • Negative numbers in context • Using negative numbers with all four operations			**Expressions, equations and inequalities** • Writing expressions • Recognising equivalent expressions • Forming equations • Forming inequalities		
Spring	**2-D geometry**						**The Cartesian plane**					
	Angles • Measuring and drawing angles • Angles on a straight line and around a point • Angles in parallel lines • Creating expressions from angle facts		**Classifying 2-D shapes** • Classifying polygons according to their properties • Rotational and line symmetry • Internal angle sum of triangles and quadrilaterals		**Constructing triangles and quadrilaterals** • Using a ruler, protractor and compasses to construct 2-D shapes • Using properties of quadrilaterals and triangles to explore standard constructions.		**Coordinates** • Plotting points in all four quadrants • Horizontal and vertical lines • Midpoints of line segments • Problem solving on a coordinate grid		**Area of 2-D shapes** • Area of triangles and quadrilaterals • Formulae and solving equations		**Transforming 2-D figures** • Translation, rotation and reflection of an objects on a cartesian plane • Enlargement by a positive scale factor	
Summer	**Fractions**						**Ratio and proportion**					
	Primes, factors and multiples • Prime factor decomposition • LCM and HCF • Square roots and cube roots		**Fractions** • Equivalent fractions • Converting between fractions and decimals • Recurring decimals • Multiply and divide fractions • Fractions of amounts • Mixed numbers and improper fractions • Addition and subtraction of fractions				**Ratio** • Ratio notation • Understand the relationship between ratio and fractions • Working with ratios and quantities			**Percentages** • Equivalence to fractions and decimal fractions • Percentage of an amount • Percentage increase and decrease		

A closer look at Year 7

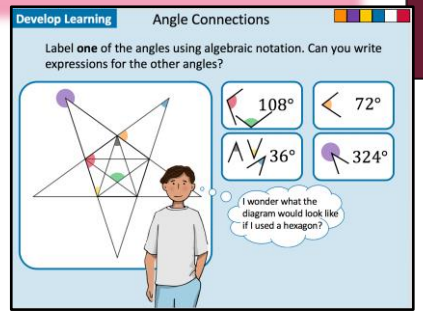
Mastery half terms group together topics from the same area of mathematics. This helps students make connections between mathematical topics and avoids reteaching when developing concepts in isolation.

The first term of year 7 focusses on developing understanding of the axioms and structures of number that are fundamental to mathematics. This underpins understanding of the algebraic notation developed in this term and in subsequent years.



	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	Making generalisations about the number system 1						Making generalisations about the number system 2					
	Numbers and numerals	Axioms and arrays		Factors and multiples		Order of operations	Positive and negative numbers			Expressions, equations and inequalities		
Spring	2-D geometry						The Cartesian plane					
	Angles		Classifying 2-D shapes		Constructing triangles and quadrilaterals		Coordinates		Area of 2-D shapes		Transforming 2-D figures	
Summer	Fractions						Ratio and proportion					
	Prime factor decomposition		Conceptualising and comparing fractions		Manipulating and calculating with fractions			Ratio		Percentages		

The spring term of year 7 focusses on geometry, an important area of mathematics for students to engage with. The cumulative nature of the curriculum means that students apply algebraic reasoning in new contexts.



Students' understanding of fractions, decimals and percentages from KS2 is built upon throughout the year. This is developed more formally in the summer term where time is spent linking different interpretations of fractions and introducing ratio.

Year 8

	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	Equations and inequalities 1						Equations and inequalities 2					
	Sequences		Forming and solving equations		Forming and solving inequalities		Linear graphs			Accuracy and estimation		
Spring	Proportional reasoning						Representations and reasoning with data					
	Ratio	Real life graphs and rate of change		Direct and inverse proportion			Univariate data			Bivariate data		
Summer	Angles						Area, volume and surface area					
	Angles in polygons			Bearings			Circles and composite shapes		Volume and Surface area of prisms			

Year 9

	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	Probability						Linear simultaneous equations					
	FDP review	Probability		Sets, Venn and sample space diagrams			Solving algebraically			Solving graphically		
Spring	Geometry of triangles						Ratio and proportion					
	Angle review	Constructions, congruence and loci		Pythagoras' Theorem			Ratio review	Similarity and enlargement		Surds and trigonometry		
Summer	Quadratics						Reasoning with number					
	Quadratic expressions			Quadratic equations			Indices and standard form			Growth and decay		