West Coventry Academy
Respectful | Responsible | Resilient | Ready to Learn

WCA Maths Department

WCA Maths Department Curriculum Vision – The Maths Department at WCA aims to provide all students with a consistent and enjoyable experience of Mathematics, where they learn to appreciate the beauty of our subject. We will achieve this through our commitment to excellent teaching of our well-designed curriculum which builds on prior knowledge, responds to prior understanding and consolidates previous work in order to improve long term recall. Our curriculum will make our students think through challenging content and making connections between topics, as well as developing resilience in their approach, through an emphasis on problem solving approaches once required skills have been taught. We aim to prepare our students to become confident, numerate individuals who take away the mathematical tools that they need for their chosen career and in all aspects of their adult life.

WCA Maths Department Curriculum Sequencing – Our WCA Maths curriculum covers the six key strands in the KS3 and KS4 national curriculum programmes of study. We are currently working towards a five-year spiral curriculum where our revisiting, interleaving and stretch and challenge will be clearly laid out. The WCA Maths Curriculum Map is a living document which responds to the needs of each individual cohort. However, the fundamental principles of our sequencing remain the same. We aim to vary the stand content that students experience, whilst ensuring that the pre-requisite knowledge for any topic has been taught at some point prior to this topic starting. For each of years 7 – 10 the sequencing of the topics is based on all students being taught the same content at the same time so that when set changes do occur, students are not disadvantaged by having any missing knowledge. In light of the lockdown and periods of remote learning last academic year, we have had to adapt and rebuild the Curriculum Map for 2021-22 in order to revisit key topics that had been taught during periods of remote or blended learning, and teach the topics that we had been forced to miss out due to the restrictions of remote teaching. This has resulted in an increased focus on aspects of geometry and statistics in this curriculum map. However, we have built in topics of algebra, number and ratio to give students the desired varied diet of learning.

Key Stage 3 Curriculum Map - Maths

Year 7 Curriculum Map 2021-22		**Halfterm1**	**Halfterm2**	**Halfterm3**	**Halfterm4**	**Halfterm5**	**Halfterm6**
Mathematics	Curriculum Content inc Knowledge, Skills & Cultural Capital	• *Sequences – identifying and continuing linear, geometric and quadratic sequences, identifying linear sequences by making straight line graphs* • *Algebraic Notation – introduction to algebra, simplifying expressions, function machines* • *Equality and equivalence – collecting like terms, fact families and solving one step equations*	• *Place value – understanding place value, rounding to 10, 100, decimal places, significant figures, comparing integers, find the range and median for a set of numbers, standard form* • *FDP Equivalence – converting between FDP, fractions above 1, use and interpret pie charts*	• *Number – factors, multiples and primes, HCF and LCM, calculating with integers and decimals, estimating calculations, negative numbers* • *Angles – drawing and measuring angles, calculating angles on a straight line/around a point, in triangles and quadrilaterals, introduction to angles in parallel lines, angles in polygons*	• *Fractions – calculating with fractions and mixed numbers* • *Revisiting negative numbers and algebraic notation* • *Equations – revisit solving 1 step equations, solving 2 step equations, expanding brackets, solving equations with brackets, introduction to solving equations with unknowns on both sides*	• *Multiplicative reasoning – sharing and simplifying ratio, direct proportion problems* • *Perimeter and area – perimeter and area of rectangles, triangles, trapeziums, parallelograms, interleave working on adding and subtracting decimals and fractions, problem solving with perimeter and area (fractions, percentages etc), revisit writing equations.*	• *Perimeter and area – perimeter and area of rectangles, triangles, trapeziums, parallelograms, interleave working on adding and subtracting decimals and fractions, problem solving with perimeter and area (fractions, percentages etc)* • *Collecting and analysing data – calculating averages from a list and table (revisit calculating median and range), bar chart, revisit pie charts, scatter graphs, two-way tables.*
8 hrs per fortnight	Assessment	Mini assessments on sequences, algebraic notation, equality and equivalence	Mini assessments on place value, FDP equivalence DDI assessment	Mini assessment number DDI assessment	Mini assessments on fractions, equations	Mini assessment multiplicative reasoning	Exams Mini assessment data
	Outside of the Curriculum						

Year 8 Curriculum Map 2021-22		Halfterm1	Halfterm2	Halfterm3	Halfterm4	Halfterm5	Halfterm6
Mathematics 8 hrs per fortnight	Curriculum Content inc Knowledge, Skills & Cultural Capital	• *Ratio and scale – simplifying and sharing ratio, ratios and related fractions, unit ratios, introduction to pi and diameter* • *Multiplicative Reasoning – direct proportion and conversion graphs, converting currencies, similar shapes, scale drawings*	• *Multiplying and dividing fractions – multiplying and dividing fractions, mixed numbers and introduction to algebraic fractions, reciprocals* • *Working in the Cartesian plane – plotting coordinates, plotting lines parallel to the axis, plotting straight line graphs, midpoint of a segment, recognise non-linear graphs*	• *Transformations – reflection, rotation, translation, enlargement, combined transformations* • *FDP – converting FDP, fraction and percentage of amount, revisit multiplying and dividing fractions, adding and subtracting fractions* • *Revisit algebraic notation/calculations with decimals in advance of HT4*	• *Algebraic Expressions – simplifying expressions, expanding and factorising linear and quadratic expressions, substitution,* • *Probability – probability of equally mutually exclusive events, expected frequency, introduction to Venn diagrams, and introduction to tree diagrams* • *Revisit opportunity for ??*	• *Constructions and Loci - perpendicular and angle bisectors, loci from a point and line, scale drawings and constructing triangles, congruent shapes* • *Revisit negative numbers* • *Equations - solving 1 & 2 step equations, revisit expanding brackets, solving equations with brackets, solving equations with unknowns on both sides, solving equations with powers, introduction to forming simple equations, changing the subject of a simple formulae*	• *Equations - solving 1 step equations, solving 2 step equations, revisit expanding brackets, solving equations with brackets, solving equations with unknowns on both sides, solving equations with powers, introduction to forming simple equations* • *Graphs – revisit plotting straight line graphs from HT2, finding the equation of straight-line graphs, identify parallel and perpendicular lines, rearrange into the form y = mx + c*
	Assessment	Mini assessments on ratio and scale, multiplicative reasoning DDI assessment	Mini assessments on multiplying and dividing fractions, working in the cartesian plane	Mini assessments on transformations, FDP	DDI assessment Mini assessments on probability and algebraic expressions	Mini assessment on constructions and loci	Mini assessment on equations and graphs Exams
	Outside of the Curriculum						

Year 9 Curriculum Map 2021-22		Halfterm1	Halfterm2	Halfterm3	Halfterm4	Halfterm5	Halfterm6
Mathematics 8 hrs per fortnight	Curriculum Content inc Knowledge, Skills & Cultural Capital	• *Straight Line Graphs – plotting straight line graphs, using y = mx + c, Finding the equation of straight-line graphs* • *Equations and Inequalities – solving linear equations and inequalities, forming linear equations* • *Testing Conjectures – forming proofs, expanding linear and binomial brackets*	• *2D and 3D Shapes – basic geometry and nets, plans and elevations, area of shapes (R), volume and surface area of prisms* • *Constructions and Loci – perpendicular and angle bisectors, loci from a point and line, scale drawings and constructing triangles, congruent shapes*	• *Constructions and Loci – perpendicular and angle bisectors, loci from a point and line, scale drawings and constructing triangles, congruent shapes* • *Collecting and Analysing Data – calculating averages from lists and tables, comparing datasets, bar charts, pie charts, scatter graphs and interpreting relationships, two-way tables, time series graphs.* • *Fractions, Ratio and Percentages – converting FDP, fraction and percentage of amount, sharing and simplifying ratio, reoccurring decimals to fractions, reverse percentages*	• *Fractions, Ratio and Percentages – converting FDP, fraction and percentage of amount, sharing and simplifying ratio, reoccurring decimals to fractions, reverse percentages* • *Revisit solving equations* • *Angles – angles on a straight line/around a point, interior angles of polygons (incl. triangles and quadrilaterals), forming and solving equations with angles*	• *Number – prime factor trees, HCF and LCM, indices (including fraction and negative), simplifying and rationalising simple surds, standard form (including calculating)* • *Trigonometry – Pythagoras theorem, introduction to trigonometry finding missing angles and sides*	• *Trigonometry – Pythagoras theorem, introduction to trigonometry finding missing angles and sides* • *Graphs – revisit straight line graphs from HT1, finding parallel and perpendicular lines, more complex graphs, real life graphs.*
	Assessment	Mini assessments on Straight line graphs and Equations and Inequalities	Mini assessments on Testing Conjectures and 2D and 3D shapes DDI Assessment	Mini assessment on constructions and loci	Mini assessments on data, FRP, angles DDI assessment	Mini assessment number	Mini-assessments on trigonometry, graphs Exams
	Outside of the Curriculum						