

# Curriculum Overview – MATHEMATICS

## Key Stage 3

Year 7	Year 8	Year 9
Place value & rounding. Integer properties (inc. Divisibility) Powers & roots. Integer arithmetic. Order of operations (BIDMAS). Comparing fractions & decimals. Fraction arithmetic. Converting to/from percentages. Percentage with/without calculator. Percentage increase/decrease. Simplifying ratios. Proportion. Dividing in a given ratio. Algebraic notation. Simplifying expressions. Removing brackets. Using substitution & formulae. Writing expressions & formulae. Forming/solving equations. Sequences & subscript notation. Using position-to-term rules. Using term-to-term rules. Linear sequences. Inputs/outputs & function notation. Drawing linear graphs. Read/plot/interpret practical graphs Geometric notation for lines/angles Constructing bisectors. Angle properties. Polygon properties. Classifying tessellations. Nets. Reflection & rotation symmetry. Translation & enlargement. Metric measurements. Perimeter, surface area, volume.	Approximations. Indices. Formulae. Pythagoras' theorem. Converting measurement units. Circles & compound shapes. Volume. Substitution. Factorisation. Solving linear equations. Trial & improvement. Ruler & compass constructions. Loci. 2D representation of 3D shapes. Practical graphs. Decimal operations & properties. Sequences. Ratio & proportion. Bearings. Linear graphs. Simultaneous equations. Standard form. Interior/exterior angles. Collecting data. Statistical diagrams. Comparing distributions. Transformations. Percentage multipliers. Probability.	Standard form calculations. Upper & lower bounds. Power laws. Surds. Reciprocals. Fractions, decimals, percentages. Fraction arithmetic. Algebraic fraction arithmetic. Recurring decimals. Repeating percentage change. Ratio & proportion. Direct/inverse proportion. Solving linear/non-linear equations. Simultaneous linear equations. Solve linear inequalities (1D & 2D). Writing/simplifying expressions. Removing brackets, factorisation. Deriving & using formulae. Linear & quadratic sequences. Linear & non-linear graphs. Congruent triangles. Length/area/volume scale factors. Calculate speed/density/pressure. Sector area/perimeter. Prism volume & surface area. Trigonometry & Pythagoras. Averages from grouped data. Finding quartiles. Cumulative frequency graphs. Box & whisker diagram. Adding probabilities. Multiplying probabilities. Relative frequency. Using Venn diagrams. Thales' theorem. Geometric sequences.



<p>Using area formulae. Data types &amp; collection. Averages &amp; range. Statistical charts/diagrams. Basic probability. Venn diagrams &amp; set notation.</p>		<p>Solving quadratic equations.</p>
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**Textbooks Used:** New National Framework Mathematics

ISBN: 978-0-7487-6752-6 (**Year 7**), 0-7487-6754-1 (**Year 8**), 0-7487-6756-8 (**Year 9**)



## Key Stage 4

### GCSE Exam Board: AQA Mathematics (8300)

Year 10	Year 11
Numbers, Factors and Multiples	Circle Theorems
Fractions, Decimals and Percentages	Pythagoras' Theorem and Basic Trigonometry
Rounding and Bounds	Sine and Cosine Rules
Ratio and Proportion	Direct and Inverse Proportion
Indices, Standard Form and Surds	Vectors
Probability	Sketching Graphs
Collecting and Representing Data	Transforming Functions
Statistical Measures	Algebraic Fractions
Basic Algebra Review and Linear Equations	Real Life Graphs
Sequences	Gradients and Rates of Change
Numerical Methods	Pre-calculus and Area under a Curve
Growth and Decay	Measures
Quadratic Expressions	Perimeter and Area
Rearranging Formulae	Volume
Inequalities	
Coordinates and Linear Graphs	
Further Equations and Graphs	
Simultaneous Equations	
Angles, Scale Diagrams and Bearings	
Construction and Loci	
Congruence and Similarity	
2D Representations of 3D Shapes	
Transformations	

NB: Further Maths students will cover the vast majority of this content in year 10 (see further maths overview for more details)

**Textbook Used:** CGP Maths for GCSE - Higher (for the Grade 9-1 Course) ISBN: 9781782944379



## Key Stage 5

### A Level Exam Board: OCR B: MEI

Y 12	Year 13
Algebra	Further Differentiation
Co-ordinate Geometry	Further Integration
Trigonometry	Further Trigonometry
Differentiation	Numerical Methods
Integration	Correlation and Regression
Statistical Distributions	Further Probability
Probability	Normal Distribution
Hypothesis Testing	Further Kinematics
Kinematics	Dynamics
Newton's Laws	Moments

**Textbook Used:** CGP Mathematics for A-level 978178294723 3