The Charter School North Dulwich

# Maths

## Key Stage 3 Curriculum Map

| | Module One | Module Two | Module Three | Module Four | Module Five |
|---|---|---|---|---|---|
| Y7 | **Topic: Number**<br><br>**Key Learning:**<br>• Rounding and estimating<br>• Bidmas and number laws<br>• Operations with fraction and decimals<br>• Factors and multiples and primes<br>• Multiplying and dividing by powers of 10<br><br>**Assessment:** topic test | **Topic: Algebra**<br><br>**Key Learning:**<br>• Solving linear equations<br>• Algebraic manipulation<br>• Expanding and factorising<br>• Linear graphs<br>• Working with formulae<br>• Sequences<br><br>**Assessment:** two topic tests | **Topics: Ratio and Proportion**<br><br>**Key Learning:**<br>• Working with percentages and percentage change<br>• Working with ratio<br>• Standard units<br>• Using ratio to read maps and scales<br><br>**Assessment:** topic test | **Topics: Geometry and Measure**<br><br>**Key Learning:**<br>• Interpreting maps and scale drawings.<br>• Angle geometry<br>• Transformations<br>• Area and perimeter<br>• Volume and surface area<br>• Similarity and congruence<br><br>**Assessment:** Two cumulative assessments | **Topics: Probability and Statistics**<br><br>**Key Learning:**<br>• The probability scale and probability of exhaustive events<br>• Probabilities of single and combined events<br>• Theoretical and experimental probabilities and expected and relative frequencies<br>• Constructing sample space diagrams<br>• Displaying data and calculating averages<br><br>**Assessment**: End of year assessments |

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| Y8 | **Topic: Number**<br><br>**Key Learning:**<br>• Rounding and limits of accuracy and calculating with bounds<br>• Powers, roots and index laws<br>• Operations with fractions<br>• Highest common factor and lowest common multiple<br>• Working with numbers in standard form<br><br>**Assessment**: topic test | **Topic: Algebra**<br><br>**Key Learning:**<br>• Solving linear equations (including involving algebraic fractions)<br>• Expanding and factorising (linear and quadratic expressions)<br>• Understanding algebraic terminology<br>• Changing the subject of the formula, substituting into formula<br>• Equation of a straight line, parallel and perpendicular lines, further sequences<br><br>**Assessment:** topic test | **Topics: Ratio and Proportion**<br><br>**Key Learning:**<br>• Working with percentages and repeated percentage change using multipliers<br>• Working and problem solving with ratio<br>• Understanding gradients as rates of change<br>• Direct and inverse proportion, conversion between units and compound measure<br><br>**Assessment:** cumulative assessment | **Topics: Geometry and Measure**<br><br>**Key Learning:**<br>• Transformations<br>• Angle geometry<br>• Area and perimeter (including compound shapes)<br>• Volume and surface area of 3D shapes including prisms<br>• Similarity and congruence, Pythagoras' theorem & trigonometry<br><br>**Assessment:** Two cumulative assessments | **Topics: Probability and Statistics**<br><br>**Key Learning:**<br>• Probabilities of independent and mutually exclusive events<br>• Theoretical and experimental probabilities and expected and relative frequencies<br>• Using Venn diagrams to calculate probability, constructing sample space diagrams<br>• Displaying data in Venn diagrams and calculating averages<br>• Using two-way tables and constructing frequency polygons<br><br>**Assessment:** Two one-hour cumulative assessments |

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| Y9 | **Topics: Number**<br><br>**Key Learning:**<br>• Estimating answers and limits of accuracy and calculating with bounds<br>• Multiplication and division with decimals<br>• Conversion between terminating and recurring decimals and fractions<br>• Powers, Index laws and operations with surds<br>• Operations with fractions and mixed numbers<br>• Prime factor decomposition and using this to find the highest common factor and the lowest common multiple of 2 or more numbers<br>• Calculations with numbers in standard form | **Topics: Algebra**<br><br>**Key Learning:**<br>• Linear equations and inequalities and equations with the unknown in the denominator<br>• Expanding and factorising (linear and quadratic)<br>• Simplifying algebraic fractions<br>• Four operations with algebraic fractions<br>• Algebraic proof and understanding equivalenc e in algebraic expressions Changing the subject of the formula<br>• Equation of a straight line through two points, parallel and perpendicular lines, interpreting y-intercepts | **Topics: Ratio and Proportion**<br><br>**Key Learning:**<br>• Percentages and repeated percentage change using multipliers<br>• Reverse percentage<br>• Compound interest - solving problems, using multipliers and difference to simple interest<br>• Ratio - problem solving including division, merging ratio and subdividing and ratio changes.<br>• Equations from equality of ratios<br>• Gradient on a conversion graph as a rate of change, and the y-intercept as a fixed | **Topics: Geometry and Measure**<br><br>**Key Learning:**<br>• Transformations and column vector notation<br>• Angle geometry (angles in polygons), Geometry of compound shapes, area and arc lengths of sectors<br>• Volume and surface area of 3D shapes including prisms/cylinders /pyramids and spheres<br>• Circle Theorems<br>• Similarity in 3D shapes, plans and elevations<br>• Pythagoras' theorem and trigonometry in right angled triangles<br>• Constructions | **Topics: Probability and Statistics**<br><br>**Key Learning:**<br>• To find probabilities of independent and dependent combined events using tree diagrams<br>• Probabilities of independent and mutually exclusive events<br>• Theoretical and experimental probabilities and expected and relative frequencies<br>• Using Venn diagrams to calculate probability, constructing sam ple space diagrams, displaying data in Venn diagrams, and calculating averages<br>• To use two-way tables to solve probability problems<br>• To use two sets given in set notation to construct a Venn Diagram |

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| | and gradients in real life scenarios<br>• Solving simultaneous linear/ linear/quadratic equations<br>• Plotting quadratic and cubic graphs and finding roots and y intercepts, sequences | charge and performing conversations outside range of values in a graph.<br>• Problem solving involving direct and inverse proportion<br>• Forming direct and inverse proportion equations from given pairs of values<br>• Conversion between units and compound measure, including density and pressure, solving problems involving average density/speed/ pressure | | • To interpret a given Venn diagram to describe two sets in set notation<br>• To interpret a given Venn diagram to describe two or more sets in set notation, including their union, intersection, and complement<br>• To construct cumulative frequency tables<br>• To be able to construct pie-charts<br>• To construct and interpret simple pictograms<br>• To draw cumulative frequency graphs<br>• To construct and interpret frequency polygons<br>• To use cumulative frequency graphs to estimate the median and the quartiles<br>• To use cumulative frequency diagrams to interpret the data |

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| | | | | | • To find quartiles and IQR from cumulative frequency diagrams<br>• To draw and interpret box plots<br>• To interpret scatter diagrams |
| | **Assessment:** One-hour Assessment | **Assessment:** Two one-hour cumulative assessments | **Assessment**: One-hour assessment | **Assessment**: Two one-hour cumulative assessments | **Assessment:** Two one-hour cumulative assessments |