

• Curriculum Overview Template

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|                     | Focus              | Autumn 1                                                                                                                                                                                                                                                                                                                                                                                                                                              | Autumn 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Spring 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Spring 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Summer 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Summer 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Year 9 Higher Maths | Topic              | Consolidating year 7 and 8 topics and applying them to problem solving questions                                                                                                                                                                                                                                                                                                                                                                      | Consolidating year 7 and 8 topics and applying them to problem solving questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Consolidating year 7 and 8 topics and applying them to problem solving questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Extending knowledge onto new topics and furthering knowledge on existing topics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Extending knowledge onto new topics and furthering knowledge on existing topics                                                                                                                                                                                                                                                                                                                                                                                                                                  | Extending knowledge onto new topics and furthering knowledge on existing topics                                                                                                                                                                                                                                                                                                                                                                                                          |
|                     | Key concepts/ideas | Calculating with fractions<br>Formulae<br>Lines and angles<br>Probability<br>Fractions and percentages<br>Brackets<br>Constructions                                                                                                                                                                                                                                                                                                                   | Averages from grouped data<br>Percentage increase and decrease<br>Linear equations<br>Circles<br>Surveys<br>Calculating with decimals                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Linear graphs<br>Perimeter and area<br>Two way table<br>Ratio<br>Plans and elevations<br>Using a calculator<br>Transformations                                                                                                                                                                                                                                                                                                                                                                                                                                             | Enlargement<br>Fractions, Decimals, Percentages<br>Probability<br>Linear functions<br>Angles in polygons<br>Real life graphs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Indices<br>Checking solutions to calculations<br>Scatter graphs<br>Pythagoras and trigonometry<br>Quadratic graphs                                                                                                                                                                                                                                                                                                                                                                                               | Mean<br>Inequalities<br>Compound measures<br>Reciprocals, factors and multiples<br>Changing the subject of a formula<br>Loci                                                                                                                                                                                                                                                                                                                                                             |
|                     | Key skills         | Calculating with fractions- all 4 operations<br>Formulae- use and generate simple formulae, substitution, Lines and angles- understand and use the angle properties of parallel and intersecting lines<br>Probability- mutually exclusive events<br>Fractions and percentages- express one quantity as a fraction/percentage of another<br>Brackets- Expand and factorise simple expressions<br>Constructions- Construct triangles, polygons and nets | Averages from grouped data- calculate mode from grouped data, mean from tabulated data, compare distributions<br>Percentage increase and decrease- using multipliers<br>Linear equations- set up and solve linear equations with integer coefficients (including unknowns on both sides and with brackets)<br>Circles- name parts of a circle, find area/circumference of circles (and sectors/arcs)<br>Surveys- design and criticise questions, no limitations of sampling, exam results of a statistical enquiry<br>Calculating with decimals- 4 operations with decimals without a calculator | Linear graphs- use tables to plot linear graphs<br>Perimeter and area- calculate the perimeter and area of 2-D shapes, find the surface area of simple solids<br>Two way table- design and use two way tables for grouped and discrete data<br>Ratio- simplifying, writing, solving problems, dividing into a given ratio<br>Plans and elevations- drawing and recognising 2-D representations of 3-D shapes<br>Using a calculator<br>Transformations- translation, reflection and rotation, add/subtract vectors, draw vectors and multiply a vector by a scalar quantity | Enlargement- using fractional and integer scale factors, recognise congruency, convert between units of area/volume<br>Fractions, Decimals, Percentages- know the difference between terminating and recurring decimals, converting, find percentage change, simple interest, compound interest, reverse percentage<br>Probability- theoretical and experimental probabilities, tree diagrams<br>Linear functions- plot linear graphs, gradient, find the equation of a line<br>Angles in polygons- use interior/exterior angle rules in polygons<br>Real life graphs- Inverse and direct proportion, draw and interpret graphs modelling real life situations | Indices- use index laws and the zero index, negative powers<br>Checking solutions to calculations<br>Standard form- convert between ordinary numbers and standard form<br>Scatter graphs- draw, interpret, draw lines of best fit, comment on correlation<br>Pythagoras and trigonometry- use Pythagoras’ theorem, find angles/sides in right angled triangles using trigonometry, know exact values<br>Quadratic and cubic graphs- generate coordinates, plot graphs, solve graphically. Plot reciprocal graphs | Mean- calculate the mean from a grouped frequency diagram<br>Inequalities- solve, represent on numberlines<br>Compound measures- use rates and compound measures e.g. speed/density/rates of pay and corresponding units<br>Reciprocals, factors and multiples- find the LCM, HCF, prime factor decomposition<br>Changing the subject of a formula<br>Loci- construct loci to show paths and shapes, complete standard constructions such as perpendicular bisector, bisect an angle etc |
|                     | Key terms/vocab    | Mixed, Improper, Denominator, Numerator, Expression, Substitution, Formulae, Parallel, Intersecting, Alternate, Corresponding, Interior, Vertically opposite, Mutually exclusive, Outcomes, Factorise, Expand, Polygons, Nets                                                                                                                                                                                                                         | Mode, Mean, Distribution, Multiplier, Coefficient, Circumference, Radius, Diameter, Chord, Tangent, Arc, Segment, Sector, Bias, Population, Sample                                                                                                                                                                                                                                                                                                                                                                                                                                               | Plot, Linear, Perimeter, rea, Surface Area, Discrete, Continuous, Ratio, Plan, Elevation, Translation, Vector, Rotation, Reflection, Scalar                                                                                                                                                                                                                                                                                                                                                                                                                                | Enlargement, Scale factor, SSS, SAS, ASA, RHS, Congruence, Terminating, Recurring, Simple interest, Compound interest, Reverse percentage, Tree diagrams, Gradient, y intercept, Exterior, Interior, Direct, Inverse                                                                                                                                                                                                                                                                                                                                                                                                                                           | Index, Indices, Power, Correlation, Sin, Cos, Tan, Pythagoras Trigonometry, Quadratic, Cubic, Reciprocal, SOLution                                                                                                                                                                                                                                                                                                                                                                                               | Mean, Grouped frequency, Inequality, Density, Speed, Reciprocals, Factors, Multiples, LCM, HCF, Prime, Subject, Perpendicular, Bisect, Construct, Loci                                                                                                                                                                                                                                                                                                                                   |

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|  | <b>Independent learning / wider reading</b> | For more support and lots of practice questions go to<br>www.mymaths.co.uk                     | For more support and lots of practice questions go to<br>www.mymaths.co.uk                     | For more support and lots of practice questions go to<br>www.mymaths.co.uk                     | For more support and lots of practice questions go to<br>www.mymaths.co.uk                     | For more support and lots of practice questions go to<br>www.mymaths.co.uk                     | For more support and lots of practice questions go to<br>www.mymaths.co.uk                     |
|  | <b>Assessment</b>                           | Problem solving task                                                                           | Autumn test on topics studied so far                                                           | Problem solving task                                                                           | Spring test on topics studied so far                                                           | Summer test on topics studied so far                                                           | Problem solving task                                                                           |
|  | <b>Careers links</b>                        | Finance, Biologist, Chemist,<br>Physicist, Business Analyst,<br>Forecaster, Computer scientist | Finance, Biologist, Chemist,<br>Physicist, Business Analyst,<br>Forecaster, Computer scientist | Finance, Biologist, Chemist,<br>Physicist, Business Analyst,<br>Forecaster, Computer scientist | Finance, Biologist, Chemist, Physicist,<br>Business Analyst, Forecaster,<br>Computer scientist | Finance, Biologist, Chemist,<br>Physicist, Business Analyst,<br>Forecaster, Computer scientist | Finance, Biologist, Chemist,<br>Physicist, Business Analyst,<br>Forecaster, Computer scientist |

# Year 9 Foundation Maths

|  | Focus              | Autumn 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Autumn 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Spring 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Spring 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Summer 1                                                                                                                                                                                                                                                                                                                                                                                          | Summer 2                                                                                                                                                                                                                                                                   |
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|  | Topic              | Consolidating year 7 and 8 topics and applying them to problem solving questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Consolidating year 7 and 8 topics and applying them to problem solving questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Consolidating year 7 and 8 topics and applying them to problem solving questions                                                                                                                                                                                                                                                                                                                                                                                                                                          | Extending knowledge on topics studied in y7,8 and the first part of year 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Extending knowledge on topics studied in y7,8 and the first part of year 9                                                                                                                                                                                                                                                                                                                        | Extending knowledge on topics studied in y7,8 and the first part of year 9                                                                                                                                                                                                 |
|  | Key concepts/ideas | Negative numbers<br>Probability words and the probability scale<br>Fractions<br>Measures and scales<br>Introducing patterns and sequences<br>Introducing percentages as operators<br>Function machines and equations<br>Addition and Subtraction<br>Maps and plans<br>Permutations and combinations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Multiplication and division<br>Rounding<br>Recognising shapes, solids and parts of circles<br>Angles<br>Time<br>Formula<br>Order of operations<br>Two way tables<br>Fractions, Decimals, Percentages                                                                                                                                                                                                                                                                                                                                                                                                              | Coordinates<br>Conversion graphs<br>Reflection and rotational symmetry<br>Averages and Range<br>Representing data<br>Perimeter, Area and volume<br>Ordering decimals<br>Factors and multiples                                                                                                                                                                                                                                                                                                                             | Rounding and estimation<br>Fractions, Decimals and percentages<br>Collecting like terms<br>Properties of triangles and quadrilaterals<br>Enlargement and similarity<br>Squares and cubes<br>Negative numbers                                                                                                                                                                                                                                                                                                                                                                                                                 | Formulae<br>Equations<br>Sequences<br>Average and range<br>3-D shapes<br>Adding and subtracting fractions<br>Real life graphs                                                                                                                                                                                                                                                                     | Proportion<br>Map, scale drawings and bearings<br>Probability<br>Pie Charts                                                                                                                                                                                                |
|  | Key skills         | Negative numbers- ordering, solving problems, temperature change<br>Probability words and the probability scale- understand and use vocabulary and scale<br>Fractions- fractions of amounts<br>Measures and scales- converting in metric measures ad interpreting scales<br>Introducing patterns and sequences- recognise special sequences such as Fibonacci, continue and explain sequences in number and diagrams<br>Introducing percentages as operators- calculate percentages of amounts<br>Function machines and equations- calculate inputs/outputs, solve equations with unknowns on one side<br>Addition and Subtraction- with decimals and integers<br>Maps and plans- grid references, compass points, reading maps, direction<br>Permutations and combinations- listing outcomes | Multiplication and division- integers including powers of 10, without a calculator<br>Rounding- to powers of ten<br>Recognising shapes, solids and parts of circles<br>Angles- measure and draw all types of angle, calculate missing angles using angle facts<br>Time- calculate the time, intervals, start/finish times<br>Formula- substitution, using formula<br>Order of operations- calculate using BODMAS<br>Two way tables- extract and use information from two-way tables, create two way tables, use Venn diagrams to record and sort information<br>Fractions, Decimals, Percentages- Convert between | Coordinates- plotting and identify in all 4 quadrants<br>Conversion graphs- construct and interpret in a variety of applications<br>Reflection and rotational symmetry- perform reflections, recognise reflective and rotational symmetry<br>Averages and Range- mean, median, mode, range<br>Representing data- draw and interpret a range of data tables/charts/diagrams<br>Perimeter, Area and volume<br>Ordering decimals<br>Factors and multiples- identify factors and multiples, identify prime and common factors | Rounding and estimation- round to decimal places and significant figures, estimate<br>Fractions, Decimals and percentages- recognise equivalent fractions, change between mixed/improper fractions, percentages of amounts with/without a calculator<br>Collecting like terms- simplify expressions<br>Properties of triangles and quadrilaterals- missing angles in triangles/quadrilaterals, properties of quadrilaterals<br>Enlargement and similarity- enlarging shapes and identifying similar/congruent shapes<br><br>Squares and cubes- understand square/cube/roots<br>Negative numbers- performing the 4 operations | Formulae- substituting and deriving<br>Equations- solving and exploring methods of solving<br>Sequences- term to term rule and nth term<br>Average and range- compare distributions and reviewing averages<br>3-D shapes- Isometric drawing, nets, volume<br>Adding and subtracting fractions- with differing denominators<br>Real life graphs- create and interpret in a variety of applications | Proportion- Direct proportion<br>Map, scale drawings and bearings- estimating areas, interpreting maps/scale drawings, drawing bearings<br>Probability- listing outcomes, probability from experiments, equally likely outcomes<br><br>Pie Charts- construct and interpret |

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