

Maths Curriculum Map

	Autumn	Spring	Summer
Year 7	<p>Number:</p> <ul style="list-style-type: none"> • 4 operations with integers, decimals and negatives • Powers and roots • Factors, multiples and primes • Four operations with fractions <p>Shape:</p> <ul style="list-style-type: none"> • Co-ordinates • Properties of triangles and quadrilaterals • Angles • Plans and elevations <p>Algebra:</p> <ul style="list-style-type: none"> • Simplifying expressions • Expanding brackets • Substitution • Solving equations • Rearranging formulae • Sequences <p>Probability:</p> <ul style="list-style-type: none"> • Calculating simple probability • Experimental probability 	<p>Ratio:</p> <ul style="list-style-type: none"> • Simplifying a ratio • Sharing in a ratio <p>Percentages:</p> <ul style="list-style-type: none"> • Percentage increase and decrease • Simple and compound interest • Percentage change • Reverse percentages <p>Shape:</p> <ul style="list-style-type: none"> • Constructions • Area of triangles, trapezia, parallelograms and circles • Area of compound shapes • Volume of prisms • Bearings • Scale Drawings: <p>Fractions and Percentages:</p> <ul style="list-style-type: none"> • Ordering fractions and percentages • Best buys <p>Standard Form</p>	<p>Displaying data:</p> <ul style="list-style-type: none"> • Histograms • Frequency Polygons • Pie Charts • Bar Charts • Cumulative Frequency and Box Plots • Stem and Leaf diagrams <p>Scatter Graphs:</p> <ul style="list-style-type: none"> • Plotting • Drawing and interpreting <p>Algebra:</p> <ul style="list-style-type: none"> • Solving equations • Equation of straight line graphs <p>Number:</p> <ul style="list-style-type: none"> • Powers and roots including negative and fractional • Converting between fractions, decimals and percentages • Changing between recurring decimals and fractions

Year 8

Pythagoras' Theorem and Trigonometry:

- Finding a side or angle
- Applying to problem solving
- Applying to 3D problems

Angles:

- Angles on parallel lines
- Problem solving with angles

Transformations:

- Enlargement
- Reflection
- Rotation
- Translation

Algebra:

- Expanding and factorising quadratics
- Forming expressions

Shape:

- Problem solving with area
- Congruency

Inequalities

- Representing and interpreting
- Solving
- Representing graphically

Ratio:

- Multiplicative reasoning
- Problem solving

Shape:

- Similarity
- Volume, including cones, pyramids and spheres
- Surface area

Data:

- Two way tables
- Venn diagrams

Probability:

- Probability trees
- Conditional probability

Angles:

- Angles in polygons

Compound Measures:

- Speed, distance, time
- Density, mass and volume
- Converting between units of measure

Simultaneous Equations:

- Solving algebraically and graphically for linear equations
- Estimating solutions graphically for linear and quadratic equations

Rounding:

- Significant figures

Algebra:

- Plotting graphs
- Generating sequences
- Nth term of quadratic and linear sequences

Percentages:

- Problem solving involving percentage change, interest and reverse percentages

Algebra:

- Substitution
- Equation of a straight line
- Plotting cubic, reciprocal and exponential graphs
- Solving Equations
- Algebraic fractions

Year 9

Pythagoras' Theorem and Trigonometry:

- Solving problems involving right angle triangles

Iteration:

- Finding approximate solutions to equations

Bounds

Volume and Surface Area:

- Finding the volume and surface area of prisms, cones, pyramids and spheres

Statistics:

- Cumulative frequency and box plots
- Outliers
- Interquartile range
- Standard deviation

Inequalities:

- Represent and interpret inequalities
- Solve inequalities
- Represent and interpret inequalities graphically

Circle Theorems

Number:

- 4 operations with fractions
- Surds
- Standard Form

Transformations:

- All transformations including multiple describing and drawing multiple transformations

Angles:

- Interior and exterior angles of a polygon

Direct and Indirect Proportion

Bearings and Scale Drawings

Probability:

- Venn diagrams
- Venn notation
- Probability Tree Diagrams

Algebra:

- Factorising linear and quadratic expressions
- Solving equations by factorising

Number:

- Prime factor decomposition
- Using PFD to solve problems
- Using PFD to solve HCF and LCM problems involving algebra

Compound Measures:

- Problems involving compound measures
- Rates of change

Similar Shapes

Loci and Construction

Circles and Sectors:

Advanced Trigonometry:

- Sine and Cosine rule
- Trigonometric graphs

Simultaneous Equations

Vectors

Ratio:

- Problem solving with ratio and fractions

Year 10 Foundation	<p>Algebra:</p> <ul style="list-style-type: none"> • Simplifying expressions • Substitution • Expanding brackets • Factorising • Solving Equations • Inequalities • Sequences • Graphs <p>Shape:</p> <ul style="list-style-type: none"> • Angles in parallel lines • Angles in polygons • Pythagoras' Theorem • Trigonometry 	<p>Number:</p> <ul style="list-style-type: none"> • Operations of fractions • Calculating percentages • Indices • Standard form <p>Ratio and Proportion:</p> <ul style="list-style-type: none"> • Writing ratios • Using and comparing ratios • Growth and decay • Compound measures • Direct and inverse proportion • Speed, distance and time 	<p>Shape:</p> <ul style="list-style-type: none"> • Perimeter and area • Compound Shapes • Surface Area • Volume of Prisms • Transformations • Circles and semi circles • Sectors • Pyramids, cones and spheres
Year 10 Higher	<p>Algebra and Graphs:</p> <ul style="list-style-type: none"> • Linear and Quadratic graphs • Real life graphs • Simultaneous Equations • Graphing inequalities • Gradients • Trapezium Rule <p>Statistics:</p> <ul style="list-style-type: none"> • Scatter graphs • Averages • Capture, recapture • Box Plots and Cumulative Frequency • Frequency Polygons • Histograms 	<p>Number:</p> <ul style="list-style-type: none"> • Indices • Surds • Standard Form • Growth and Decay • Compound Measures • Ratio <p>Shape:</p> <ul style="list-style-type: none"> • Pythagoras' Theorem • Trigonometry • Angles in Polygons • Circles and Sectors • Volume • Similarity and Congruence 	<p>Probability:</p> <ul style="list-style-type: none"> • Venn Diagrams • Set Notation • Tree Diagrams <p>Algebra:</p> <ul style="list-style-type: none"> • Non linear Sequences • Algebraic Fractions • Composite Functions • Changing the Subject • Proof

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Year 11 Foundation</p>	<p>Pythagoras and Trigonometry</p> <ul style="list-style-type: none"> • Finding the length of a side and an angle • Knowing when to use Trigonometry and when to use Pythagoras <p>Probability</p> <ul style="list-style-type: none"> • Calculating simple probabilities • Combined events • Experimental probability • Venn Diagrams • Tree Diagrams • Sample Space Diagrams <p>Multiplicative Reasoning</p> <ul style="list-style-type: none"> • Percentage change • Compound interest 	<p>Multiplicative reasoning Continued</p> <ul style="list-style-type: none"> • Speed distance time • Density mass volume • Direct and indirect proportion <p>Quadratic Equations and Graphs</p> <ul style="list-style-type: none"> • Plotting Quadratic graphs • Expanding double brackets • Factorising quadratics • Solving quadratics algebraically 	<p>Revision based on QLA data.</p> <p>Half termly mock papers.</p>
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Year 11 Higher	<p>Multiplicative Reasoning</p> <ul style="list-style-type: none"> • Growth and decay • Compound Measures <p>Similarity and Congruence</p> <ul style="list-style-type: none"> • Congruence including proofs • Similarity with area and volume • Problem solving <p>Circle Theorems</p> <ul style="list-style-type: none"> • Circle theorems • Problem solving <p>Further Trigonometry</p> <ul style="list-style-type: none"> • Involving bounds • Trigonometric graphs • Sine rule and cosine rule • 2D and 3D trigonometric problems • Transforming trigonometric graphs <p>Vectors</p> <ul style="list-style-type: none"> • Vector notation • Vector arithmetic • Parallel and collinear vectors • Geometric problems 	<p>Equations and Graphs</p> <ul style="list-style-type: none"> • Solving simultaneous equations graphically • Representing inequalities on a line • Quadratic functions • Cubic graphs <p>Proportion and Graphs</p> <ul style="list-style-type: none"> • Direct proportion • Inverse proportion • Exponential functions • Translating graphs of functions • Reflecting and stretching graphs of functions 	<p>Revision based on QLA data.</p> <p>Half termly mock papers.</p>
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Useful Links

National Curriculum link: <https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study>
www.mymaths.co.uk
www.pearsonactivelearn.co.uk
www.mrbartonmaths.co.uk
www.mathsgenie.co.uk
<https://www.bbc.com/bitesize>

KS4 Specification Information

Edexcel GCSE Mathematics (9-1)

There are 2 tiers of entry – higher (grades 4 to 9) and foundation (grades 1 – 5)

For each tier there are 3 written exam papers - 1 non calculator paper and 2 calculator papers. Each paper is 1 hour and 30mins.

Where will this Subject take me?

Higher Education Pathways:

Degrees in: Mathematics, Medicine, Dentistry, Engineering, Computing Programming, Accountancy, Business, Operational Research, Actuarial Science, Law and Architecture.

Careers:

Careers can include Accountancy, Finance and banking, Computer game designer, Architect, Manager, Lawyer, Doctor, Pilot, Engineer, Management Consultant and many more!