

Mathematics Curriculum Overview

Below is a curriculum overview, showing what is taught at each stage of the year.

	Cycle 1	Cycle 2	Cycle 3
Year 7	<p>Topic: Unit 1: Written Calculation & Types of Number Unit 2: Data Handling and Averages Unit 3: Introduction to Algebra Unit 4: Introduction to Geometry</p> <p>Overview: Unit 1 <ul style="list-style-type: none"> • Multiplying by 10,100,1000 • Written Multiplication and Division • Four operations with negative numbers • Prime Factorisation • Highest Common Factor, Lowest Common Multiple Unit 2 <ul style="list-style-type: none"> • Data Handling Cycle • Mean, Median, Mode and Range • Comparing Data Unit 3 <ul style="list-style-type: none"> • Collecting like terms • Expanding Brackets • Function Machines • Forming Expressions • Substitution Unit 4 <ul style="list-style-type: none"> • Converting Metric Units • Area & Perimeter of Rectangle, Triangle, Parallelogram, Trapezium • Compound Shapes </p> <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week:</p>	<p>Topic: Unit 5: Fractions, Decimals and Percentages Unit 6: Probability Unit 7: Ratio and Proportion</p> <p>Overview: Unit 5 <ul style="list-style-type: none"> • Equivalent Fractions and Simplifying Fractions • Mixed and Improper Fractions • Addition and Subtraction of Fractions • Multiplication and Division of Fractions • Fraction of an amount • FDP Conversions Unit 6 <ul style="list-style-type: none"> • Theoretical probability • Sample Spaces • Two-Way Tables • Venn Diagrams • Experimental Probability Unit 7 <ul style="list-style-type: none"> • Direct Proportion • Unitary Method • Writing Ratios • Simplifying Ratios • Sharing in a Ratio </p> <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Unit 1-7 Calculator Paper</p>	<p>Topic: Unit 8: Angle Facts Unit 9: Sequences Unit 10: Transformations</p> <p>Overview: Unit 8 <ul style="list-style-type: none"> • Drawing/Measuring Angles • Basic Angle Facts • Angles in a Triangle • Angles in a Quadrilateral Unit 9 <ul style="list-style-type: none"> • Substitution • Continuing Sequences • Generating Sequences • Famous Sequences • n^{th} term of a linear sequence Unit 10 <ul style="list-style-type: none"> • Introduction to Column Vectors • Translations • Reflections • Rotations • Enlargement </p> <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Unit 1-10 Non-Calculator & Calculator Paper</p>

	Cycle 1	Cycle 2	Cycle 3
Year 8	<p>Topic: Unit 1: Calculation Unit 2: Area and Volume Unit 3: Statistics, Graphs and Charts Unit 4: Equations and Expressions</p> <p>Overview: Unit 1 <ul style="list-style-type: none"> ● Written Multiplication & division ● Divisibility Testing ● Adding/Subtracting Negative numbers ● Multiplying/Dividing Negative Numbers ● Rounding to Decimal Places and Significant Figures ● Estimation Unit 2 <ul style="list-style-type: none"> ● Area Rectangle, Triangle, Parallelogram, Trapezium ● 3D Shapes and Properties ● Volume of a Cuboid & Prism ● Surface Area ● Area & Circumference of a circle (Higher only) ● Parts of a Circle (Higher only) Unit 3 <ul style="list-style-type: none"> ● Pie Charts ● Averages and Range ● Ungrouped Frequency Tables ● Grouped Frequency Tables ● Scatter Diagrams Unit 4 <ul style="list-style-type: none"> ● Expanding Brackets ● Factorising ● Solving Equations ● Forming Equations ● Think of a number problems ● Substitution ● Using Formulae <p>Mid-Cycle Assessment:</p> </p>	<p>Topic: Unit 5: Real Life Graphs Unit 6: Decimals and Ratio Unit 7: Lines and Angles</p> <p>Overview: Unit 5 <ul style="list-style-type: none"> ● Conversion Graphs ● Distance Time Graphs ● Line Graphs ● Interpreting Graphs Unit 6 <ul style="list-style-type: none"> ● Calculating with decimals ● Ratio with decimals ● Writing & Simplifying Ratios ● Sharing in a ratio ● Unitary method Unit 7 <ul style="list-style-type: none"> ● Angles on a straight line ● Angles in a Triangle ● Types of Triangle & Quadrilateral ● Angles in a Quadrilateral ● Angles in a Polygon ● Angles in Parallel Lines <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Unit 1-7 Calculator Paper</p> </p>	<p>Topic: Unit 8: Calculating with fractions Unit 9: Straight Line Graphs Unit 10: Ratio and Percentages</p> <p>Overview: Unit 8 <ul style="list-style-type: none"> ● Equivalent Fractions and Simplifying Fractions ● Mixed and Improper Fractions ● Addition and Subtraction of Fractions ● Multiplication and Division of Fractions ● Fraction of an amount ● Convert between Fractions, Decimals and Percentages Unit 9 <ul style="list-style-type: none"> ● Plotting straight line graphs ● Gradients ● Equations of straight lines ● Parallel & Perpendicular Lines (Higher only) Unit 10 <ul style="list-style-type: none"> ● Writing percentages ● Percentages of amounts (non-calc) ● Percentage Increase/Decrease (non calc) ● Percentages of amounts (calc) ● Percentage Increase/Decrease (calc) ● Change as a percentage (Higher only) ● Reverse Percentage Change (Higher only) <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Unit 1-10 Non-Calculator & Calculator Paper</p> </p>

End of Topic Test – Open Book		
Assessment Week: Enit 1-4 Non-Calculator Paper		

	Cycle 1	Cycle 2	Cycle 3
Year 9 - High er	<p>Topic: Unit 1: Rounding, Estimation and Operations Unit 2: Roots, Indices and Standard Form Unit 3: Algebraic Expressions Unit 4: Perimeter, Area & Volume</p> <p>Overview: Unit 1 <ul style="list-style-type: none"> • Written Calculation • Rounding to a given number of decimal places or significant figures • Estimate calculations without a calculator. • Upper and Lower bounds and Bound Calculations Unit 2 <ul style="list-style-type: none"> • Square and Cube Roots • Understand Laws of Indices including negative indices • Standard Form & Calculating with Standard Form Unit 3 <ul style="list-style-type: none"> • Equivalent Expressions, expanding double brackets, simple factorising • Forming and Solving Equations • Identities, Equations, Formulae and Expressions • Rearranging Simple Formulae Unit 4 <ul style="list-style-type: none"> • Area and Perimeter of 2D shapes • Area and Circumference of Circles & Parts of Circles • Volume and Surface Area of Prisms, including cylinders. </p>	<p>Topic: Unit 5: Ratio and Fractions Unit 6: Decimals and Percentages Unit 7: Probability Unit 8: Linear Sequences and Straight Line Graphs</p> <p>Overview: Unit 5 <ul style="list-style-type: none"> • Equivalent Ratios • Sharing in a given ratio • Fraction Calculations • Finding a fraction of an amount Unit 6 <ul style="list-style-type: none"> • Decimal Calculation • Percentage of amount • Percentage Change & Reverse Percentages • Compound & simple interest Unit 7 <ul style="list-style-type: none"> • Theoretical Probability • Experimental Probability • Relative Frequency • Combinations Unit 8 <ul style="list-style-type: none"> • Substitution • Linear Sequences • Straight Line Graphs • Parallel & Perpendicular Lines • Equation of a line through a point <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> </p>	<p>Topic: Unit 9: Angle Facts & Right Angled Triangles Unit 10: Construction and Loci Unit 11: Averages and Data Unit 12: Indices and Surds</p> <p>Overview: Unit 9 <ul style="list-style-type: none"> • Parallel Line Angle Facts • Interior/Exterior Angles • Pythagoras' Theorem • Distance Between two coordinates • Trigonometry – Right Angled Triangles Unit 10 <ul style="list-style-type: none"> • Scale Drawings • Bearings • Constructing Triangles • Angle and Line Bisectors • Loci Unit 11 <ul style="list-style-type: none"> • Averages and Comparing Data • Averages from a frequency table • Scatter Graphs and Correlation • Pie Charts • Cumulative Frequency & Box Plots Unit 12 <ul style="list-style-type: none"> • Indices • Irrational Numbers • Simplifying Surds • Rationalising the Denominator <p>Mid-Cycle Assessment:</p> </p>

	Mid-Cycle Assessment: End of Topic Test – Open Book Assessment Week: Unit 1-4 Non-Calculator Paper	Assessment Week: Unit 1-8 Calculator Paper	End of Topic Test – Open Book Assessment Week: Unit 1-12 Non-Calculator & Calculator Paper
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	Cycle 1	Cycle 2	Cycle 3
Year 9 - Foundation	<p>Topic: Unit 1: Rounding, Estimation and Operations Unit 2: Operations Unit 3: Algebraic Expressions Unit 4: Perimeter, Area & Volume</p> <p>Overview: Unit 1 <ul style="list-style-type: none"> • Rounding to nearest 10,100,100 • Rounding to decimal places & significant figures • Estimating Calculations • Bounds • Error Intervals Unit 2 <ul style="list-style-type: none"> • Addition and Subtraction of 2/3 digit numbers • Long Multiplication and Division • Using 4 operations with Negative Numbers • The order of operations (BIDMAS) Unit 3 <ul style="list-style-type: none"> • Equivalent Expressions, • Expanding Brackets, Factorising Simple Expressions • Solving Linear Equations • Forming and Solving Equations • Rearranging Formulae • Identities Unit 4 <ul style="list-style-type: none"> • Area and Perimeter of Triangle, Trapezium, Parallelogram & Rectangle • Area and Circumference Circles • Volume and Surface Area of Prisms including Cylinders <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Unit 1-4 Non-Calculator Paper</p> </p>	<p>Topic: Unit 5: Ratio and Fractions Unit 6: Decimals and Percentages Unit 7: Probability Unit 8: Linear Sequences and Straight Line Graphs</p> <p>Overview: Unit 5 <ul style="list-style-type: none"> • Simplifying Equivalent Ratios • Sharing in a given 2 part and 3 part ration • Adding, Subtracting, Multiplying and Dividing Fractions • Equivalent Fractions Unit 6 <ul style="list-style-type: none"> • Add/Subtract/Multiply & Divide Decimals • Percentage of quantity • Percentage increase/decrease Unit 7 <ul style="list-style-type: none"> • Probability as a fraction • Sample Space Diagrams • Relative Frequency • Mutually Exclusive Events Unit 8 <ul style="list-style-type: none"> • Substitution • Continuing sequences • Finding the nth term of a sequence • Fibonacci & Geometric Sequences • Plotting Linear Graphs • Equation of a straight line ($y = mx + c$) <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Unit 1-8 Calculator Paper</p> </p>	<p>Topic: Unit 9: Angle Facts Unit 10: Averages and Data Unit 11: Indices, Standard Form and Prime Factors Unit 12: Right Angled Triangles</p> <p>Overview: Unit 9 <ul style="list-style-type: none"> • Angles in a triangle • Angles in a quadrilateral & polygons • Internal & Exterior Angles • Angles within parallel lines • Corresponding, Alternate & Co-Interior Angles Unit 10 <ul style="list-style-type: none"> • Mean, Median, Mode, Range • Comparing Data, • Averages from a frequency table • Averages from a grouped frequency table • Scatter graphs & correlation • Pie Charts Unit 11 <ul style="list-style-type: none"> • Highest Common Factor & Lowest Common Multiple • Prime Factorisation • Indices & Roots • Standard Form Unit 12 <ul style="list-style-type: none"> • Pythagoras Theorem • Trigonometry in a RA Triangle <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Unit 1-12 Non-Calculator & Calculator Paper</p> </p>

	Cycle 1	Cycle 2	Cycle 3
Year 10 - Higher	<p>Topic: Unit 1: Right Angled Triangle Trigonometry Unit 2: Equations, Inequalities and Formulae Unit 3: Proportion Growth and Decay Unit 4: Venn and Tree Diagrams</p> <p>Overview: Unit 1 <ul style="list-style-type: none"> Pythagoras Theorem Finding a missing side using Trigonometry Finding a missing angle using Trigonometry Unit 2 <ul style="list-style-type: none"> Solving Inequalities Representing inequalities on a number line Representing inequalities Solving one and two step equations Solving equations with unknowns on both sides Forming and Solving Equations Rearranging Formulae with squares/cubes Unit 3 <ul style="list-style-type: none"> Direct Proportion Inverse Proportion Work Problems Percentage Increase/Decrease Compound Growth/Decay Unit 4 <ul style="list-style-type: none"> Product rule for counting Frequency Tree Diagrams Tree Diagrams for Dependent and Independent events Venn Diagrams Conditional Probability (Venn Diagrams) <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Unit 1-4 Non-Calculator Paper</p> </p>	<p>Topic: Unit 5: Measures and Real Life Graphs Unit 6: Vectors, Transformations and congruence Unit 7: Quadratic and Simultaneous Equations Unit 8: Advanced Trigonometry</p> <p>Overview: Unit 5 <ul style="list-style-type: none"> Speed Distance Time Density & Pressure Gradient of Speed-Time Graph & Distance Time Graph Distance travelled from a Speed-Time graph Unit 6 <ul style="list-style-type: none"> Reflection, Rotation, Translation, Enlargement Column Vector Notation Adding and Subtracting Vectors Parallel & Collinear Vectors Similar Shapes Congruent Triangle Proofs Unit 7 <ul style="list-style-type: none"> Plotting quadratic graphs Expanding Double Brackets Expanding Trinomials Solving Quadratics by Factorising Completing the square Quadratic Formula Forming and Solving Quadratic Equations Solving Linear Simultaneous Equations Graphical Simultaneous Equations Unit 8 <ul style="list-style-type: none"> Exact Trig Values 3D Trigonometry and Pythagoras Sine Rule, Cosine Rule Area of a Triangle: $\frac{1}{2}ab \sin C$ <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week:</p> </p>	<p>Topic: Unit 9: Circles, Cylinders, cones and Spheres. Unit 10: Histograms Unit 11: Circle Geometry</p> <p>Overview: Unit 9 <ul style="list-style-type: none"> Area and Circumference of a circle Area of a sector Area of segments Arc length Surface Area, Volume of Prism, Cylinder, Cone, Sphere, Pyramid Volume and Surface Area of Frustum Unit 10 <ul style="list-style-type: none"> Averages from a Frequency Table Drawing Histograms Interpreting Histograms Sampling Unit 11 <ul style="list-style-type: none"> Circle Theorems Alternate Segment Theorem Tangent and Chord Circle Theorems <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Year 10 Mock Exams</p> </p>

	Cycle 1	Cycle 2	Cycle 3
Year 10 - Foundation	<p>Topic: Unit 1: Number and Algebra Recap Unit 2: Equations, Inequalities and Formulae Unit 3: Ratio, Proportion Unit 4: Venn and Tree Diagrams Overview: Unit 1 <ul style="list-style-type: none"> Add & Subtract Mixed Numbers Percentage of an amount Standard Form Calculations Collecting Like Terms Expanding and Factorising Unit 2 <ul style="list-style-type: none"> Solving Inequalities Solving one and two step equations Solving equations with unknowns on both sides Forming and Solving Equations Rearranging Formulae Unit 3 <ul style="list-style-type: none"> Equivalent Ratios Share a quantity in a given ratio Unitary Method Direct Proportion Work Problems Unit 4 <ul style="list-style-type: none"> Product rule for counting Frequency Tree Diagrams Tree Diagrams for Dependent and Independent events Venn Diagrams </p> <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Unit 1-4 Non-Calculator Paper</p>	<p>Topic: Unit 5: Measures and Real Life Graphs Unit 6: Vectors, Transformations and congruence Unit 7: Quadratic and Simultaneous Equations Unit 8: Circles, Cylinders, cones and Spheres Overview: Unit 5 <ul style="list-style-type: none"> Speed Distance Time Density & Pressure Best Buy & Rate of Pay Problems Gradients Distance travelled from a Speed-Time graph Unit 6 <ul style="list-style-type: none"> Reflection, Rotation, Translation, Enlargement Column Vector Notation Adding and Subtracting Vectors Similar Shapes Congruent Triangles Unit 7 <ul style="list-style-type: none"> Plotting quadratic graphs Expanding Double Brackets Factorising Quadratic Expressions Solving Quadratics by Factorising Solving Simultaneous Equations Unit 8 <ul style="list-style-type: none"> Area and Circumference of a circle Area of a sector & Arc Length Surface Area, Volume of Prism, Cylinder, Cone, Sphere, Pyramid </p> <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Unit 1-8 Non-Calculator Paper</p>	<p>Topic: Unit 9: Averages and Statistical Diagrams Unit 10: Construction and Loci Unit 11: Right Angled Triangles Overview: Unit 9 <ul style="list-style-type: none"> Pie Charts Averages from a Frequency Table Scatter Graphs and Correlation Unit 10 <ul style="list-style-type: none"> Scale Drawings Bearings Plans and Elevations Constructing Triangles Angle and Line Bisectors Loci Unit 11 <ul style="list-style-type: none"> Pythagoras Theorem Finding missing side using Trigonometry Finding missing angle using Trigonometry </p> <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Year 10 Mock Exams</p>

	Cycle 1	Cycle 2	Cycle 3
Year 11 -High her	<p>Topic: Unit 1: Circles and Tangents Unit 2: Sequences & Non-Linear Simultaneous Equations Unit 3: Further Algebra Unit 4: Non Linear Graphs</p> <p>Overview: Unit 1 <ul style="list-style-type: none"> • $y = mx + c$ revision • Equation of a line through a point • Equation of a line through two points • Parallel and Perpendicular Lines • Equation of a circle • Equation of a tangent to a circle Unit 2 <ul style="list-style-type: none"> • Solving Non-Linear Simultaneous Equations • Quadratic Sequences • Fibonacci and Geometric Sequences • Iteration Unit 3 <ul style="list-style-type: none"> • Factorising $ax^2 + bx + c$ where $a > 1$ • Adding/Subtracting/Multiplying/Dividing Algebraic Fractions • Solving equation involving algebraic fractions. • Using Functions • Composing Functions, Inverse Functions • Algebraic Proof • Quadratic Inequalities Unit 4 <ul style="list-style-type: none"> • Revise Plotting Quadratic Graphs • Finding the turning point graphically and by completing the square • Sketching Quadratic Functions • Cubic, Reciprocal, Trig Graphs • Transformations of Functions <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> </p>	<p>Topic: Unit 5: Revise: Number & Algebra Unit 6: Revise: Geometry Unit 7: Revise: Statistics & Probability</p> <p>Overview: Unit 5 <ul style="list-style-type: none"> • Surds & Indices • Irrational Numbers to fractions • Quadratic Equations • Simultaneous Equations Unit 6 <ul style="list-style-type: none"> • RA Trigonometry • Sine and Cosine Rule • Exact Trig Values • Parallel Line Angle Facts • Exterior/Interior Angles • Area, Perimeter, Volume, • Similar Shapes & Congruent Shapes • Loci and Constructions Unit 7 <ul style="list-style-type: none"> • Cumulative Frequency Diagrams • Box Plots • Averages from a frequency table • Histograms • Tree Diagrams • Venn Diagrams <p>Mid-Cycle Assessment: Sections of GCSE Papers</p> <p>Assessment Week: Year 11 March Mock Exams</p> </p>	<p>Topic: Unit 8: Revise: Ratio, Proportion and Rates of Change</p> <p>Overview: Unit 9 <ul style="list-style-type: none"> • Ratio Problems • Worded percentage problems • Rates of Change (Gradients & Areas) Inverse & Direct Proportion Mid-Cycle Assessment: Section of GCSE Paper</p> <p>Assessment Week: GCSE Summative Exams</p>

	Assessment Week: Year 11 November Mock Exams		
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	Cycle 1	Cycle 2	Cycle 3
Year 11 -Foundation	<p>Topic: Unit 1: Proportion Unit 2: Growth and Decay Unit 3: Non- Linear Graphs Unit 4: Further Trigonometry</p> <p>Overview: Unit 1 <ul style="list-style-type: none"> Unitary Method Recipes Formal Method for Proportion Direct and Inverse Proportion Unit 2 <ul style="list-style-type: none"> Simple and Compound Interest Percentages Revision Reverse Percentage Change Repeated Percentage Change Unit 3 <ul style="list-style-type: none"> Drawing quadratic graphs Features of Quadratic graphs Solving quadratic equations graphically Reciprocal and Cubic Graphs Proportion Graphs Unit 4 <ul style="list-style-type: none"> Pythagoras Revision Trigonometry Revision Exact Trig Values </p> <p>Mid-Cycle Assessment: End of Topic Test – Open Book</p> <p>Assessment Week: Year 11 November Mock Exams</p>	<p>Topic: Unit 5: Revise: Number & Algebra Unit 6: Revise: Geometry Unit 7: Revise: Statistics & Probability</p> <p>Overview: Unit 5 <ul style="list-style-type: none"> Number Problem Solving Fractions Calculations Percentage Calculations Financial Maths Questions Written Calculation Solving Equations Equivalent Expressions Rearranging Formulae Expanding, Factorising, Solving Quadratics Unit 6 <ul style="list-style-type: none"> Angle Facts Area, Perimeter, Volume Loci & Constructions Pythagoras and Trigonometry Unit 7 <ul style="list-style-type: none"> Mutually Exclusive Events Tree Diagrams Venn Diagrams Bar Charts & Pictograms Scatter Graphs and Correlation Averages and the range Averages from a Frequency Table </p> <p>Mid-Cycle Assessment: Sections of GCSE Papers</p> <p>Assessment Week: Year 11 March Mock Exams</p>	<p>Topic: Unit 8: Revise: Ratio, Proportion and Rates of Change</p> <p>Overview: Unit 9 <ul style="list-style-type: none"> Ratio Problems Worded percentage problems Rates of Change (Gradients & Areas) Inverse & Direct Proportion </p> <p>Mid-Cycle Assessment: Section of GCSE Paper</p> <p>Assessment Week: GCSE Summative Exams</p>

