Maths Curriculum Map

Intent: The mathematics curriculum aims to offer our students the opportunity to develop a solid foundation in the key mathematical components: number skills, algebra, geometry, ration and proportion and probability and statistics. This is achieved through teaching these mathematical concepts from a first principle basis to develop a deeper understanding and becoming fluent in the fundamentals of mathematics by developing their problem solving skills. We encourage a deep understanding and memory through revisiting and building upon prior knowledge.

Through our curriculum we aim for our students to link and master the different components to contextual real world problems, allowing students to appreciate the importance and power of mathematics in their everyday lives.

Term	Autumn 1	Assessment 1	Autumn 2	Assessment 2	Spring 1	Spring 2	Assessment 3	Summer 1	Summer 2
Year 7	**Number:** Operations with integers Operations with decimals Money questions Negatives in real life Four rules of negatives BIDMAS Inverse operations Factors, Multiples and Primes Highest common factor Lowest common multiple Rounding Estimating answers	Assessment 1	**Number:** Squares, Cubes and Roots Indices Product of Primes Standard Form Fractions; Equivalent, Simplifying, Comparing Operations with fractions Finding a fraction of an amount Fractions, decimals, percentages Percentages of amounts	Assessment 2	**Algebra**: Introduction to Algebraic conversions Function machines Algebraic manipulation - Addition, Subtraction, Multiplication and Division Forming Expressions Substitution into formulae **Geometry:** Coordinates Measuring and drawing angles Angles round a point and on a line Problem solving with angles in triangles and quadrilaterals	**Data:** Tally charts Bar charts Pictograms Vertical Line Charts Frequency tables and diagrams Averages **Probability:** Calculating probabilities Experimental probability	Assessment 3	**Geometry:** Area and perimeter of 2D shapes 3D shapes Nets **Ratio:** Simplify ratios Split into ratios Introduction to proportion Exchanging money	Teachers explore all the topics exposed in previous terms through methods of application to empower students. This should be done through a mixture of activities and revision.

Year 8	Number: Operations with integers Four rules of negatives BIDMAS Estimating answers Operations with decimals Standard form Operations with fractions Fractions of amounts Factors, Multiples Product of primes Highest common factor Lowest common multiple Indices	Assessment 1	Number: Fractions, Decimals and Percentages Calculate Percentage of an Amount (without a calculator) Value for Money Geometry: Area and Perimeter; Parallelogram, Trapezium and Circle Volume of 3D shapes	Assessment 2	Ratio: Sharing amounts using ratio Using ratio for recipe Questions Exchanging money Introduction to proportion Data: Discrete and continuous data Two-way tables Frequency trees Averages and the Range Line graphs Scatter graphs Stem and leaf	Algebra: Algebraic manipulation Simplifying and factorising expressions Substitution Solving equations Sequences Generate Special Sequences Introduction to graphs Find gradient of a line	Assessment 3	Geometry: Reflections Rotations Translations Angles at a point Angles between parallel lines Angles in a Triangle Properties of special triangles Probability: Listing outcomes Calculating probabilities Mutually exclusive probabilities Experimental probabilities Possibility spaces	Teachers explore all the topics exposed in previous terms through methods of application to empower students. This should be done through a mixture of activities and revision.

| Year 9 | **Number:**
Operations with integers
Estimating answers
BIDMAS
Standard form
Operations with fractions
Fraction of an Amount
Fractions, decimals and percentages
Percentage increase/decrease,
Change to a percentage,
Reverse percentages
Simple Interest
Introduction to Bounds | **Number:**
Indices
Rounding
Introduction to bounds

Algebra; Simplifying expressions
Expanding brackets
Forming and solving formulae/equations
Substitution
Straight line graphs
Gradient of a line
Drawing graphs | **Algebra:**
Generating a sequence
Nth term
Special sequences

Geometry:
Perimeter and area of 2D shapes
Surface area of a prism
Volume of 3D shapes
Angles
Angles in a triangle
Angles in parallel lines
Angles of Polygons;
Angles in polygons
Bearings | Metric conversions

Probability:
Listing outcomes
Calculating probabilities
Mutually exclusive events
Experimental probability
Venn diagrams
Tree diagrams | **Data:**
Discrete and Continuous,
Two-way Tables,
Frequency Trees
Pie Charts
Scatter Graphs
Averages and the Range

Geometry:
Transformations;
Reflections
Translations
Rotations
Enlargements
Pythagoras' Theorem

Ratio:
Sharing amounts using Ratio
Using ratio in Recipe style questions
Proportion | Teachers explore all the topics exposed in previous terms through methods of application to empower students. This should be done through a mixture of activities and revision. |

| Year 10 (F) | Number:
Decimals
Indices
Bounds
Error Intervals
Estimating answers
Mathematical Reasoning
Standard form
Percentages;
Percentage change
Reverse percentages
Simple Interest
Compound Interest
Depreciation problems
Growth and Decay
Metric conversions
Compound units | Assessment 1 | Algebra:
Factorising
Expanding brackets
Forming and solving linear equations
Inequalities on a number line
Solving linear inequalities
Sequences
Fibonacci
Geometric Progressions
Straight Line Graphs
Gradient of a line
Midpoint of a line
Equation of a Straight Line
Drawing Graphs
Factorising and solving quadratics
The difference of two squares
Roots and turning points of quadratics | Assessment 2 | Algebra:
Simultaneous equations

Geometry:
Perimeter and area
Tangents, Arcs, Sectors and Segments
Surface Area and Volume; Spheres, Pyramids, Cones and Frustums
Angles in parallel lines
Angles in polygons
Bearings

Ratio:
Introduction to proportion
Sharing into a ratio | Geometry:
Pythagoras' Theorem
Trigonometric Ratios
Exact Trigonometric Values

Probability:
Experimental probability
Listing outcomes
Venn Diagrams
Tree Diagrams | Assessment 3 | Data:
Averages
Sampling
Pie Charts
Scatter graphs
Populations
Stratified Sampling and Time Series Graphs

Geometry:
Similar shapes
Transformations
Scale drawings
Vectors
Construction
Loci | Teachers explore all the topics exposed in previous terms through methods of application to empower students. This should be done through a mixture of activities and revision. |

| Year 10 (H) | Number:
Decimals
Indices
Bounds
Percentage change
Reverse percentages
Simple Interest
Compound Interest
Depreciation
Growth and Decay | **Assessment 1** | Algebra:
Factorising linear and quadratic expressions
Expanding brackets
Forming and solving equations
Sequences
Quadratic sequences
Straight Line Graphs
Gradient of a line
Equation of a Straight Line
Parallel and perpendicular lines
Drawing Graphs
Solving quadratic equations with formula and completing the square.
Roots and turning points of quadratics | **Assessment 2** | Algebra:
Simultaneous equations including quadratic equations

Geometry:
Tangents, Arcs, Sectors and Segments
Surface Area and Volume; Spheres, Pyramids, Cones and Frustums
Angles in parallel lines
Angles in polygons
Circle theorems

Ratio:
Sharing into a ratio
Direct and inverse proportion | Geometry:
Pythagoras' Theorem
Trigonometric Ratios
Exact Trigonometric Values
Area of a triangle
Trig and bearings

Probability:
Experimental probability
Listing outcomes
Venn Diagrams
Tree Diagrams
Conditional probability

Data:
Cumulative frequency
Box plot | **Assessment 3** | Data:
Averages
Sampling
Pie Charts
Scatter graphs
Histogram
Populations
Stratified Sampling and Time Series Graphs

Geometry:
Similar shapes
Transformations
Scale drawings
Vectors
Construction
Loci | Teachers explore all the topics exposed in previous terms through methods of application to empower students. This should be done through a mixture of activities and revision. |

	Number:		Algebra:		Algebra:	Geometry:		Exam	Summer
Year 11 (F)	Fractions Indices Bounds Error Intervals Estimating answers Mathematical Reasoning Percentages Standard form Fractions Percentage change Reverse percentages Simple Interest Compound Interest Depreciation problems Growth and Decay	Mock Exam 1	Factorising Expanding brackets Solving equations Inequalities on a number line Solving Linear Inequalities Sequences Geometric progressions Special sequences Substitution Straight Line Graphs The Gradient of a Line Midpoint of a Line Equation of a Straight Line Factorising and Solving Quadratics The Difference of Two Squares Roots and Turning Points of Quadratics Drawing graphs	Mock Exam 2	Simultaneous equations **Geometry:** Area and perimeter of 2D shapes Tangents, Arcs, Sectors and Segments Surface Area and Volume; Spheres, Pyramids, Cones and Frustums Compound Units Distance-Time Graphs **Proportion:** Intro to proportion Ratio	Angles Loci Bisecting angles Bearings Construction Pythagoras' Theorem Trigonometric Ratios to Find Missing Sides and Angles in Right-Angled Triangles Exact Trigonometric Values Similar Shapes Congruent Triangles Scale Drawings Vectors Transformations **Statistics:** Pie Charts Scatter Graphs Sampling Populations, Stratified Sampling Time Series Graphs Averages	Mock Exam 3	preparation on all topics. Revision packs included on every major topic taught. Then the students are exposed to past and specimen exam papers.	Examinations take place.

| Year 11 (H) | Number:
Mathematical Reasoning, Negative Indices, Error Intervals and Standard Form
Recurring Decimals to Fractions
Upper and Lower Bounds
Surds
Direct and Inverse Proportion
Percentages
Fractions

Algebra:
Product of Three Binomials
Rearranging formulae
Factorising Quadratics with a coefficient >1
Iterative Processes
Algebraic Proof | Mock Exam 1 | Geometry:
Transformations - Negative Scale Factor
Circle Theorems
Similarity - Area and Volume and Congruency
Trigonometry
The Sine and Cosine Rule
Pythagoras' Theorem
Trigonometric Ratios in 3D shapes | Mock Exam 2 | Probability:
Calculating probabilities
Tree diagrams
Venn diagrams

Statistics:
Pie Charts
Scatter graphs
Sampling
Cumulative Frequency
Boxplots
Histograms

Algebra:
Solving quadratics
Algebraic Fractions
Roots and Turning Points of Quadratics
Completing the Square
Simultaneous Equations with a Quadratic Equation
Inverse and Composite Functions | Algebra:
Perpendicular lines
Equations of a circle
Pythagoras on a line
Sequences
Regions
Inequalities

Geometry:
Distance-Time Graphs and Velocity-Time Graphs
Vectors
Trigonometric Graphs
Transformation of Functions
Surface Area and Volume; Spheres, Cones, Pyramids and Frustums | Mock Exam 3 | Exam preparation on all topics. Revision packs included on every major topic taught. Then the students are exposed to past and specimen exam papers. | Summer Examinations take place. |