Maths Curriculum 2022-23

	Term 1	Term 2	Term 3
YEAR 7	• Order positive decimal values. • Order positive and negative decimal values • Use < and > to compare two decimal values • Round, or truncate numbers to a given number of decimal places. • Round, or truncate numbers to significant figures • Factors, multiples, primes etc. • Add and subtract whole numbers and decimals • Multiply and divide whole numbers • Multiplication and division of decimals • Four operations with negative numbers • Order of operations • Introduction to algebra • Substitution • Simple equations	• Reflection • Rotation • Translation • Enlargement: Perimeter • Area of a rectangle • Areas of other shapes • 3D shapes • Equivalent fractions • Improper fractions and mixed numbers • Simplifying fractions • Calculate fractions of an amount • Add and subtract fractions • Multiply and Divide fractions • Percentages • Fractions, Decimals and Percentages (FDP) • Percentages of amounts (non-calculator methods)	• Understanding proportion • Understanding Ratio • Dividing in a ratio • Shapes and their properties • Understanding angles • Angle rules • Illustrating statistics, and reading tables part 1 • Summarising statistics part 1 • Probability part 1
YEAR 8	• Estimate Calculations by Rounding to 1sf • Rounded numbers • Powers and roots • Express as a product of prime factors • Standard Form • Operations with decimals	• Find the area of rectangles and triangles • Areas of other shapes • The Circle • Volume and Surface Area of Cubes, Cuboids and Triangular Prisms • The four rules with fractions	• Further shapes, eg. polygons • Further angle properties • Illustrating statistics, and reading tables part 2 • Summarising statistics part 2 • Probability part 2

	• Further substitution • Algebraic manipulation • Equations and inequalities • Sequences and nth term • Linear graphs Further reflection • Further rotation • Further translation • Further enlargement	• Further percentages • Further fractions, decimals and percentages (FDP) • Calculating with Percentages	
YEAR 9	• Positive and negative indices • Convert numbers from decimal notation to standard form and vice versa • Calculate with Standard Form • Further algebraic manipulation • Further equations and inequalities • Graphs and their properties	• Combining transformations • Constructions and loci • Similarity and congruence • Trigonometry • Pythagoras' Theorem • The circle, and sectors • The cylinder • Simple Interest • Compound Interest and repeated percentage change, and multipliers • Reverse percentages	• Revision of ratio • Direct proportion problems • Inverse proportion problems • Angle rules • Angles in polygons • Illustrating statistics, and reading tables part 3 • Summarising statistics part 3 • Probability part 3
YEAR 10	MASTERY: • Standard form calculations • Plot and interpret straight line graphs. • Gradients & intercepts incl. parallel lines & real-life graphs. • Bearings and scale drawings AIMING FOR: • Solve problems with standard form • Evaluate negative indices	MASTERY: • Transformations and invariance • Use loci and constructions to solve problems • Two way tables and frequency trees • Venn Diagrams and probability • Averages from frequency tables AIMING FOR: • Use similarity and congruence to prove basic theorems	MASTERY: • Solve problems involving area and perimeter incl. circles and part circles • Revise fractions, decimals, percentages • Solve problems involving percentages • Solve problems with speed, density & pressure. AIMING FOR:

- Solve problems involving HCF and LCM - Apply & interpret limits of accuracy - Plot quadratic graphs, identify & interpret roots & turning points - Expand 2 binomials - Rearrange formulas - Set up and solve equations and inequalities - Use angle laws to solve problems **AIMING HIGHER:** - Manipulate surds, and rationalise a denominator - Calculate with fractional indices - Upper and lower bounds - Use iteration to estimate solutions: - Complete the square, use to solve problems - Use the quadratic formula - Simultaneous equations - Expand trinomials - Understand and use the circle theorems to solve problems	- Use Pythagoras' Theorem and SOHCAHTOA to solve problems - Methods of sampling used to eliminate bias and deal with outliers - Averages from frequency tables **AIMING HIGHER:** - Enlarge using a negative scale factor - Area and volume scale factors - Formal congruency proofs - Sine and cosine rule 3D geometry - Find probabilities from Venn Diagrams - Product rule for counting combinations	- Solve problems involving volume and surface area - Arc length and sector area - Solve problems involving percentages, incl. find amounts before percentage changes. - Compound and simple interest problems - Solve problems with direct and inverse proportion (k) incl. graphs. **AIMING HIGHER:** - Volume and surface area of more advanced shapes, eg. the sphere - Set up and solve growth and decay problems - Combine ratios & co-ordinate ratio. - Set up proportionality formulas and use to solve problems.

YEAR 11

MASTERY:
- Evaluate negative indices
- Solve problems involving HCF and LCM
- Manipulate basic surds
- Plot quadratic graphs
- Expand and factorise quadratics

AIMING FOR:
- Simplify basic surds
- Set up and solve simultaneous equations
- Factorise using DOTS

AIMING HIGHER:
- Advanced surds
- Recurring decimals
- Iteration
- Proof
- Functions
- Non-linear sequences
- Algebraic fractions
- Equation of a circle
- Non-linear simultaneous equations
- Inequalities and regions
- Parallel and perpendicular lines

MASTERY:
- Use angle laws to solve problems including properties of polygons
- Use similarity and congruence to prove basic theorems
- Use Pythagoras' Theorem and SOHCAHTOA to solve problems
- Methods of sampling used to eliminate bias and deal with outliers
- Time series graphs
- Solve problems involving volume and surface area

AIMING FOR:
- Exact ratios in trigonometry
- Length, area and volume scale factors
- Find probabilities from Venn Diagrams
- Product rule for counting combinations
- Volume and surface area of more advanced shapes, e.g. the sphere
- Calculate exactly with multiples of π

AIMING HIGHER:
- Understand and use the circle theorems to solve problems
- Prove angle theorems, e.g. the circle theorems
- Sine & cosine rules
- 3D Pythagoras
- Negative & fractional scale factors
- Conditional probability

MASTERY:
- Equations and graphs that show direct and inverse proportion

AIMING FOR:
- Combine ratios
- Express a ratio as an algebraic relationship

AIMING HIGHER:
- Non-linear and inverse proportion
- Transformations of graphs
- Foundations of calculus

		- Cumulative frequency and box plots - Histograms - Working backwards & problem solving with volume and surface area of 3D & composite shape	
YEAR 12	**Pure** - Algebraic techniques - Quadratic functions - Equations and inequalities - Graphs and transformations - Straight line graphs - Binomial Theorem **Statistics** - Data collection and summarising - Representing data - Probability Distributions and hypothesis testing	**Pure** - Circles - Algebraic methods - Trigonometry **Mechanics** - Modelling Constant acceleration	**Pure** - Vectors - Differentiation - Integration - Exponentials and logarithms **Mechanics** - Forces and motion Variable acceleration
YEAR 13	**Pure** - Algebraic methods - Functions and graphs - Sequences and series - Binomial theorem - Radians - Trigonometry **Statistics**	**Pure** - Parametric equations - Differentiation - Numerical methods - Integration **Mechanics** - Applying forces - Projectiles	**Pure** Vectors Revision

	• Regression and correlation • Probability • The normal distribution Mechanics • Forces • Equilibrium Moments.	• Vectors Kinematics	