Maths

Our intent: Our Mathematics Curriculum is designed to offer all students challenge through their development as problem solvers. The depth of problem solving they experience across the three years of Key Stage 3, will see them develop a resilience and appreciation of the links between mathematical principles and their applications in the world around them, and beyond!

Year	Half term	Content
7	a)	**Positive numbers**: Addition, subtraction, multiplication, division, order of operations. **Negative numbers**: Number lines and combined operations.
	b)	**Statistics**: Statistical calculations, draw and interpret different types of statistical graphs. **Statistics project. Introduction to algebra:** substitution, simplifying expressions
	c)	**Equations**: Solving one and two step equations and those with brackets. **Fractions**: Add/subtract/multiply/divide and convert mixed numbers and improper fractions
	d)	**Decimals and Percentages**: Convert fractions, decimals and percentages and deal with calculations involving percentages.
	e)	**Angles**: parallel lines, angle properties in triangles, transformations
	f)	**Area and perimeter:** Find the area and perimeter of any 2-dimensional shape, including circles. **Surface area and volume**: area and volume of cubes and cuboids. **Square project**
8	a)	**Factors & Multiples**: Use of Primes, Powers, HCF & LCM. **Estimating**: Rounding to decimal places & significant Figures. **Ratio**: Notation, Simplification, Sharing of amounts, Use of scales and Speed/Distance/Time.
	b)	**Percentages**: Percentage/Decimal/Fraction, one quantity as a percentage of another, simple interest, increase & decrease.
	c)	**Algebra**: Interpreting notation, evaluating expressions and formulae, express real-world situations algebraically, simplify expressions and Proofs. **Equations and Inequalities**: Linear problems, problems involving brackets, forming equations & understanding properties of inequalities.
	d)	**Co-ordinates & Functions**: Using co-ordinate systems, using functions, creating graphs from functions and calculating their gradients. **Number Patterns**: Recognising and extending number patterns, finding the formula for the general term of a sequence.
	e)	**Angles in Polygons**: Classifying polygons, recognising properties of polygons. **Perimeter and Area of Shapes**: For all standard shapes including Parallelograms and Trapezia. **Volume and Surface Area**: Draw 3D and Net representations of standard shapes, Calculate Volumes and Surface Areas of standard shapes, and convert units of measure.
	f)	**Cube Project** and **Statistics**: Interpretation and construction of charts and graphs.
9	a)	**Powers & Standard Form**: Laws of Indices and calculations involving standard form. **Ratio, Direct & Inverse Proportion**: understand concepts involved, connect quantities via graphs, tables, or equations. **Linear Equations**: Rearrange equations, solve simultaneous equations graphically or algebraically.

	b)	**Factorisation & Quadratic Expressions**: Factorise algebraic expressions, manipulate and create quadratic expressions. **Pythagoras' Theorem**: Apply theorem to solve and prove triangular problems.
	c)	**Non-Linear Graphs**: Distance-Time Graphs, graphs for rate of change, properties of quadratic, reciprocal, and quadratic graphs. **Congruence & Similarity**: Understand concepts and properties of, solve similarity problems, interpret scale drawings, loci.
	d)	**Trigonometry & Bearings**: Know and apply trig ratios, measure, and calculate bearings. **Surface Area**: calculate solutions surrounding prisms, cylinders, pyramids, and cones.
	e)	**Financial Maths**: Savings accounts, Interest, Budgeting
	f)	**Financial Maths**: Borrowing/debt, tax, investing.