Mathematics Curriculum Overview
2023 – 2024

Department Name:	Mathematics
Head of Department:	Dr G Williams
Subject Teachers:	Miss S Quirk Mrs F Hall Mr R Filtness Mr R Leadbetter Mrs S Thomson-Keohane Miss L Taylor Mr J Ayub Mr D Azad Mr L Charity
Accommodation and Resources:	Nine classrooms equipped to accommodate class sizes of up to 32 pupils. Each classroom is stocked with appropriate textbooks, mathematical equipment and interactive whiteboards.
What will students learn in each year?	
Year 7	**Please note** that the curriculum below has been revised for 2023-24 and year 8 curriculum will be updated as a follow in next year Term 1: **7.1 Zero to One Billion and 7.2 Negative Numbers** • Place value of integers • Rounding to the nearest 10, 100, 1000 • Add and subtract using written and mental methods • Ordering and comparing positive and negative numbers • Negative numbers in context Term 2: **7.3 Decimals and 7.4 Multiplication and Division** • Place value and ordering of decimals • Add and subtract with decimals • Rounding to decimal places and significant figures • Mental and written methods for multiplication and division • Multiply and divide using powers of ten Term 3: **7.5 Applying Multiplication** • Multiply and divide with negative numbers • Multiples and Factors • Lowest Common Multiples (LCMs) and Highest Common Factors (HCFs)

	• Area of rectangles and parallelograms Term 4: **7.6 Fractional Thinking** • Simplify and order fractions • Convert improper fractions and mixed numbers • Calculate with fractions including mixed numbers Term 5: **7.7 Primes and 7.8 Squares, Cubes and Roots** • Identify factors, multiples and primes • Prime factorisation • HCFs and LCMs through prime factor decomposition • Factors in expressions • Square and cube numbers • Roots and estimating roots • Calculations involving powers and roots • Converting between ordinary form and standard form and ordering numbers in standard form Term 6: **7.9 Order of Operations** • Order of operations – non-calculator • Forming function machines • Order of operations - calculator • Estimation
Year 8	Term 1: **8.1 Proportional Reasoning** • Ratio • Direct proportion • Multiplying and dividing fractions Term 2: **8.2 Representations** • Coordinates • Straight line graphs • Tables, charts and graphs • Probability Term 3: **8.3 Algebraic Techniques** • Expressions, equations and formulae • Expand brackets • Solve linear equations • Inequalities • Sequences • Indices Term 4: **8.4 Developing Number** • Fractions, decimals and percentages • Percentage calculations • Standard form • Rounding • Estimation • Measures

	Term 5: **8.5 Developing Geometry** • Properties of polygons including symmetry • Perimeter and area • Line symmetry and reflection Term 6: **8.6 Reasoning with Data** • Charts and graphs • Averages • Distribution of data sets
Year 9	**Year 9 is a bridging year so students can embed key skills and knowledge to go into Key Stage 4 with confidence. This is to help secure progress at the end of Key Stage 4. It helps students to have some autonomy over their curriculum decisions, without narrowing their curriculum prematurely.**
	Term 1: **9.1 Additional Number Applications** • Integers & place value • Decimals • Indices, powers and roots Term 2: • Factors, multiples and primes **9.2 Algebraic Equations** • Algebra: the basics • Expanding and factorising Term 3: • Substitution into formulae **9.3 Data Representation** • Tables, charts and graphs • Pie charts • Scatter graphs Term 4: **9.4 Fractions, Decimals and Percentages** • Fraction calculations • Fractions, decimals and percentages • Percentage calculations Term 5: **Reasoning with Algebra** • Equations • Inequalities • Sequences Term 6: **9.5 Angle Theorems and Polygons** • Properties of shapes • Parallel lines and angle facts • Interior and exterior angles of polygons
Year 10	Term 1: **10.1 Data and Averages** • Statistics and sampling • The averages **10.2 2D and 3D Shapes** • Perimeter and area

	Term 2: • 3D forms and volume **10.3 Graphs and Coordinate Geometry** • Real-life graphs • Straight-line graphs Term 3: **10.4 Transformations** • Translations, rotations & reflections • Enlargements & combinations of transformations **10.5 Ratio and Proportion** • Ratio Term 4: • Proportion **10.6 Trigonometry** • Pythagoras • Trigonometry **10.7 Probability** • Probability I Term 5: • Probability II • Multiplicative reasoning • Plans and elevations Term 6: • Constructions, loci and bearings **10.8 Quadratic Equations** • Quadratic equations: expanding and factorising • Quadratic equations: graphs
Year 11	**Exam Board:** Pearson Edexcel **Qualification:** GCSE Mathematics Term 1: **11.1 Further Number Applications** • Circles, cylinders, cones and spheres • Fractions and reciprocals • Indices and standard form Term 2: • Similarity and congruence in 2D **11.3 Vectors** • Vectors **11.4 Equations and Graphs** • Rearranging equations, graphs of cubic and reciprocal functions and simultaneous equations Terms 3 to 6: **11.4 Whole Exam Preparation** • Revision
Year 12	Term 1: Pure • Algebra and functions • Coordinate geometry Term 2:

	Pure • Further algebra • Trigonometry Term 3: Pure • Vectors Mechanics • Quantities and units in mechanics • Kinematics 1 (constant acceleration) Term 4: Pure • Differentiation Mechanics • Forces & Newton's laws • Kinematics 2 (variable acceleration) Term 5: Pure • Integration Statistics • Statistical sampling • Data presentation and interpretation • Probability Term 6: Pure • Exponentials and logarithms Statistics • Statistical distributions • Statistical hypothesis testing
Year 13	**Exam Board:** Pearson Edexcel **Qualification:** A Level Mathematics Term 1: Pure • Proof • Algebraic and partial fractions • Functions and modelling Mechanics • Moments • Forces at any angle • Applications of kinematics Term 2: Pure • Series and sequences • The binomial theorem • Trigonometry Mechanics • Applications of forces • Further kinematics

	Term 3: Pure • Parametric equations • Differentiation • Numerical methods Statistics • Regression and correlation • Probability Term 4: Pure • Integration • Vectors (3D) Statistics • The Normal distribution Terms 5 and 6: • Revision