Subject: Year 10 Maths

Year 10 Curriculum Intent: The Year 10 maths curriculum aims to provide students with the skills to become fluent in the fundamentals of mathematics, through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. The Year 10 curriculum builds directly on students' progress from KS3 through a mastery and problem-solving approach. Mathematical concepts are explored through small steps developed from the White Rose scheme of learning to allow students to fully understand each element and avoid cognitive overload and repetition of rote methods. Students will be given the opportunity to solve problems every lesson through both independent and group tasks. The aim of year 10 is not only to consolidate and embed all prior skills but also to link them together to enable students to access and reason with complex mathematical problems. By the end of year 10, the maths department aims to ensure students have an understanding of similarity and congruent proofs, have begun to use trigonometric functions, are able to solve and form different equations and inequalities. Students will also start to be introduced to GCSE exam style questions and problems.

	Scheme 1: Similarity	Scheme 2: Developing Algebra	Scheme 3: Geometry	Scheme 4: Proportions & Proportional Change	Scheme 5: Delving into Data	Scheme 6: Using Number
Acquire	Congruent shapes. Similar shapes. Scale factors of enlargement. Trigonometric ratios. Exact trigonometric values of key angles.	Meaning of solution and solution set. Inequalities on a number line representation. Linear simultaneous equations.	Angles rules. Bearings notation. Area and circumference of a circle. Parts of a circle. Volume of cylinders, cones and spheres. Vector notation.	Ratio and fractional form. Currencies. Compound interest formula.	Sampling and its limitations. Line graphs and time series data. Group data. Lines of best fit and correlation. Extrapolation.	Area and volume of shapes. Factors, multiples and primes. Arithmetic and geometric sequences. Rules of indices. Standard index form.
Apply	Explore the difference between congruence and similarity. Enlarge a shape about a given point; understand and use similarity. Find missing sides in similar shapes including pairs of similar triangles. Understand and use the conditions for a pair of congruent triangles.	Form and solve equations and inequalities in a variety of contexts, including with unknowns on both sides. Represent solutions to inequalities on a number line. Represent solutions to equations graphically. Form and solve a pair of linear simultaneous equations graphically.	Understand and use bearings. Calculate area and circumference. Name parts of a circle and perform related calculations. Find areas and volume related to circles, including cylinders, cones and spheres. Vector arithmetic – addition, subtraction and multiplication by a scalar. Explore vectors and translations.	Use ratios, including with mixed units. Explore fractions in ratios. Explore fractions from ratios. Combining ratios. Calculate unit prices ('best buys'). Convert currencies. Convert fractions, decimals and percentages. Find percentages and percentage changes. Find one number as a percentage of another. Calculate simple and compound interest.	Construct and interpret tables and line graphs for time series data. Understand and represent with grouped data. Understand and identify correlation. Use lines of best fit, understanding the impact of extrapolation. Construct and interpret frequency polygons. Evaluate measures of location and dispersion. Use statistical diagrams and measures to compare distributions.	Use four operations with integers (positive and negative), decimals and fractions, with and without context. Work out the exact answers e.g. area and volume. Evaluate calculations involving percentages. Use factors, multiples, primes and prime factorisation. Recognise and use arithmetic and geometric sequences. Recognise and use other sequences.

	Work out missing lengths and angles in right-angled triangles. Use the exact values of key angles.	Form and solve a pair of linear simultaneous equations algebraically.		Evaluate exponential change e.g. depreciation. Find original values. Review single event probability – comparing theoretical and experimental. Understand and work with mutually exclusive and independent events. Construct and interpret tree diagrams. Find probabilities from frequency trees, tables and Venn diagrams.		Work out powers and roots. Use the rules of indices. Calculate with numbers in standard index form.
Vocabulary	Enlarge Reflection Similar Proportion Corresponding Parallel Alternate Co-interior Congruent Adjacent Opposite Hypotenuse Tangent Sine Cosine	Solution Variable Equation Expression Identity Linear Intersection Inequality Substitute LCM: lowest common multiple Eliminate Coordinate	Cardinal directions Bearing Perpendicular Clockwise Construct Circumference Diameter Radius Tangent Chord Frustum Hemisphere Magnitude Scalar Column vector Resultant	Ratio Equivalent Integer Denominator Numerator Exponent Compound interest Depreciation Growth Decay Multiplier Event Outcome Intersection Union Universal Set	Population Sample Representative Random sample Bias Primary data Secondary data Outlier Truncate Round Credit Debit Profit Tax Balance Estimate	Factor Multiple HCF: highest common factor LCM: lowest common multiple Arithmetic Geometric Standard (index) Form Commutative Base Power Exponent Coefficient

Assessment	Congruency, similarity and enlargement Milestone Trigonometry Milestone Low stakes skills check to assess acquisition of key skills.	Representing solutions of equations & inequalities Milestone Simultaneous Equations Milestone Low stakes skills check to assess acquisition of key skills.	Angles & Bearings Milestone Vectors Milestone Low stakes skills check to assess acquisition of key skills.	Proportions Milestone Probability Milestone Low stakes skills check to assess acquisition of key skills.	Collecting, representing & interpreting data Milestone PPE1 – Formal assessments Paper 1 Non-Calculator Paper 2 Calculator Low stakes skills check to assess acquisition of key skills	Indices & Roots Milestone Manipulating Expressions Milestone Low stakes skills check to assess acquisition of key skills