	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Theme/Big Idea	Mastering number, algebra and mathematical structure	Interpreting data and applying mathematical reasoning	Exploring relationships in Algebra and Geometry	Exploring Shape, Space and Graphical relationships	Reasoning in Space, Solutions and Uncertainty	Applications of Ratio, Proportion and Rates
Content What are they learning? (including keywords)	<u>Unit 1:</u> **Number** Students will learn to apply advanced number skills, including estimating, working with powers, roots and indices, and using standard form. They will explore prime factorisation, HCF and LCM, and distinguish between rational and irrational numbers, developing precision and confidence in solving complex numerical problems. <u>Unit 2:</u> **Algebra** Students will develop algebraic fluency by simplifying expressions using index laws, expanding and factorising, and solving equations with brackets and fractions. They will explore sequences, including arithmetic, geometric and quadratic, and apply formulae	<u>Unit 3:</u> **Interpreting and representing data** Students will learn to represent and interpret data using a range of diagrams, including pie charts, frequency polygons and scatter graphs. They will analyse trends, choose appropriate displays, identify misleading graphs, and use averages and grouped data to make informed comparisons and predictions. <u>Unit 4:</u> **Fractions, ratio and percentages** Students will develop fluency with fractions, ratios and proportions, applying these to real-life contexts such as currency and measurement. They will solve problems involving percentage change,	<u>Unit 5 (part):</u> **Angles and trigonometry** Students will explore key geometric principles, including angle relationships in triangles and polygons, and apply Pythagoras' theorem and trigonometry to calculate lengths and angles. They will solve real-life problems involving distance and angles, building confidence in reasoning, accuracy and applying mathematical techniques to practical situations. <u>Unit 6 (part):</u> **Graphs** Students will develop skills in graphing and interpreting linear and non-linear relationships, including quadratic, cubic and reciprocal graphs. They will analyse real-life graphs, calculate gradients and intercepts, and understand motion through distance-time	<u>Unit 6 (part):</u> **Graphs** Students will develop skills in graphing and interpreting linear and non-linear relationships, including quadratic, cubic and reciprocal graphs. They will analyse real-life graphs, calculate gradients and intercepts, and understand motion through distance-time and velocity-time graphs, building strong connections between algebra, geometry and real-world applications. <u>Unit 7:</u> **Area and volume** Students will learn to calculate perimeter, area and volume of complex shapes, including circles, prisms, cones and spheres. They will convert units, work with π, and solve real-life problems involving surface area and measurement, developing accuracy,	<u>Unit 8 (part):</u> **Transformations and constructions** Students will develop spatial awareness and precision by working with 2D and 3D shapes, transformations and constructions. They will interpret scale drawings and bearings, use geometric tools accurately, and solve problems involving loci, building confidence in applying geometry to real-world contexts. <u>Unit 9:</u> **Equations and inequalities** Students will learn to solve quadratic and simultaneous equations using a range of methods, including factorising, completing the square and the quadratic formula. They will also solve inequalities and apply these skills to real-life problems, developing	<u>Unit 11:</u> **Multiplicative reasoning** Students will learn to apply percentage change in real-life contexts, including growth and decay, alongside calculating rates, speed and acceleration. They will work with compound measures and use ratio, direct and inverse proportion to solve practical problems, developing confidence in applying mathematics to everyday situations.

	confidently, strengthening problem-solving skills and understanding of mathematical patterns and relationships. **Key vocabulary list in Y10 Higher Appendix 1**	compare ratios, and understand direct proportion, building confidence in practical decision-making and applying mathematical skills to everyday situations. <u>Unit 5 (part):</u> **Angles and trigonometry** Students will explore key geometric principles, including angle relationships in triangles and polygons, and apply Pythagoras' theorem and trigonometry to calculate lengths and angles. They will solve real-life problems involving distance and angles, building confidence in reasoning, accuracy and applying mathematical techniques to practical situations. **Key vocabulary list in Y10 Higher Appendix 1**	and velocity-time graphs, building strong connections between algebra, geometry and real-world applications. **Key vocabulary list in Y10 Higher Appendix 1**	reasoning and confidence in applying geometry to practical situations. <u>Unit 8 (part):</u> **Transformations and constructions** Students will develop spatial awareness and precision by working with 2D and 3D shapes, transformations and constructions. They will interpret scale drawings and bearings, use geometric tools accurately, and solve problems involving loci, building confidence in applying geometry to real-world contexts. **Key vocabulary list in Y10 Higher Appendix 1**	confidence in algebraic reasoning and problem-solving. <u>Unit 10:</u> **Probability** Students will learn to understand and apply probability, using diagrams such as sample spaces, trees and Venn diagrams. They will calculate and compare probabilities, explore independence and conditional events, and evaluate fairness, building reasoning and decision-making skills in uncertain situations. **Key vocabulary list in Y10 Higher Appendix 1**	**Key vocabulary list in Y10 Higher Appendix 1**
Skills How are they learning it?	Apply mathematical thinking to recognise structure in number systems, sequences, algebra and index laws. Use mathematical reasoning to justify methods and processes, explain properties, interpret results, and	Apply mathematical thinking to recognise connections, structure and relationships between variables/ratio, proportion, fractions and percentages as linked concepts/angles, shapes, and trigonometric ratios.	Apply mathematical thinking to recognise structure across different functions, make connections between equations and their graphs, and recognise relationships between angles, shapes and trigonometric ratios.	Apply mathematical thinking to recognise structure across different functions, make connections between equations and their graphs, recognise connections between 2D and 3D shapes, how measurements scale and relate to each other,	Apply mathematical thinking to recognise structure in transformations and spatial relationships, equations, making connections between algebraic forms, graphs, and connecting concepts in probability.	Apply mathematical thinking to recognise structure in direct and inverse proportion, connecting ratios, formulas, and compound measures. Use mathematical reasoning to interpret changes over time,

	explain solutions in context. Use visual representations to organise and communicate mathematical ideas clearly.	Use mathematical reasoning to explain relationships, justify solutions, and interpret results in geometric and real-life contexts. Deepen understanding through variation, exploring and comparing different strategies for solving different problems.	Use mathematical reasoning to interpret and compare graphs, explain relationships, justify conclusions from real-life graphs, and interpret results in geometric and real-life contexts. Use representations such as diagrams, graph sketches and angle models to support visualisation and communicate mathematical ideas clearly.	identify structure in transformations and spatial relationships. Use mathematical reasoning to interpret and compare graphs, explain relationships, justify conclusions from real-life graphs, interpret units and determine appropriate levels of accuracy, describe transformations and justify construction methods. Use representations such as coordinate axes, diagrams, and graph sketches to visualise, analyse, and communicate mathematical ideas and problems.	Use mathematical reasoning to describe transformations, justify solutions and construction methods, interpret results and identify relationships between events. Use representations including tree diagrams, Venn diagrams etc, to organise, visualise and communicate ideas clearly, and using graphs and sketches to analyse and communicate mathematical ideas and problems.	compare rates, and justify proportional relationships in real-life contexts. Use representations such as tables, formulas, and proportional relationships to organise and communicate mathematical ideas clearly.
Key Questions	How do skills such as estimating, using powers and roots, and working with standard form help students solve complex numerical problems with greater accuracy and efficiency? Why is it important to understand concepts like prime factorisation, HCF and LCM, and the difference between rational and irrational numbers when developing confidence in advanced number work?	How do different graphical representations (such as stem-and-leaf diagrams, frequency polygons, pie charts, and scatter graphs) help in analysing patterns and relationships within data? What factors determine the choice of the most appropriate diagram or statistical measure (such as averages or range) when presenting and interpreting a set of data?	How do angle rules and trigonometric ratios work together to solve problems involving triangles and polygons? Why is it important to understand and apply geometric principles, including exact trigonometric values and angles of elevation and depression, when solving real-world measurement problems? What are the key connections between equations, graphs, and	What are the key connections between equations, graphs, and their features (such as intercepts, symmetry, gradients, and midpoints), and how do these connections support accurate graph interpretation? Why is it important to analyse and interpret real-life graphs — such as distance-time and velocity-time graphs — and understand concepts like direct proportion, parallel and	What is the role of constructions, loci, and scale drawings in accurately representing and solving geometric problems, including those involving bearings and 3D shapes? Why is it important to apply precise geometric techniques—such as using a ruler and compass or interpreting plans and elevations—when solving spatial and design-based problems?	How do repeated percentage changes, rates, and compound measures work together to model and solve real-life problems involving growth, decay, and speed? What is the relationship between direct and indirect proportion, ratio, and compound measures, and how do these connections support problem-solving across different contexts?

	What is the difference between expressions, equations, formulae, and identities, and **how** does understanding these distinctions support accurate algebraic reasoning?	**Why** is it important to recognise misleading graphs and use trends, lines of best fit, and data summaries accurately when making predictions or drawing conclusions from data? **How** do operations with fractions, ratios, proportions, and percentages support accurate problem-solving in real-life contexts such as finance, measurement, and comparison? **Why** is it important to apply skills like converting units, finding reciprocals, and calculating percentage changes when solving practical, real-world problems? **How** do angle rules and trigonometric ratios work together to solve problems involving triangles and polygons? **Why** is it important to understand and apply geometric principles, including exact trigonometric values and angles of elevation and depression, when solving real-world measurement problems?	their features (such as intercepts, symmetry, gradients, and midpoints), and how do these connections support accurate graph interpretation? **Why** is it important to analyse and interpret real-life graphs — such as distance-time and velocity-time graphs — and understand concepts like direct proportion, parallel and perpendicular lines, and rates of change?	perpendicular lines, and rates of change? **How** does knowledge of area, volume, and surface area formulas help in solving complex problems involving compound and three-dimensional shapes? **Why** is it important to consider maximum and minimum possible values and apply precise calculations when solving real-life problems involving shapes, space, and measurement? **What** is the role of constructions, loci, and scale drawings in accurately representing and solving geometric problems, including those involving bearings and 3D shapes? **Why** is it important to apply precise geometric techniques—such as using a ruler and compass or interpreting plans and elevations—when solving spatial and design-based problems?	**How** do methods such as factorising, completing the square, and using the quadratic formula support the accurate solving of quadratic equations in different forms? **How** do tools such as sample space diagrams, tree diagrams, frequency trees, and Venn diagrams help in calculating and understanding probabilities for different types of events? **What** is the difference between concepts such as mutually exclusive events, independent events, and conditional probability, and how do these ideas impact probability calculations?	

Assessment (specific assessed piece(s); milestone(s))	Unit 1 Learning Review. Unit 2 Learning Review. Assessment 1, covering unit 1 and 2. QLA sheets provided from this.	Unit 3 Learning Review. Unit 4 Learning Review. Assessment 2, covering unit 3 and 4. QLA sheets provided from this.	Unit 5 Learning Review. Assessment 3, covering unit 5. QLA sheets provided from this. Unit 6 Learning Review.	Unit 7 Learning Review. Assessment 4, covering units 6 and 7. QLA sheets provided Possibly Unit 8 Learning Review.	Unit 8 Learning Review. Unit 9 Learning Review. Unit 10 Learning Review.	End of year Assessments, covering content from Units 1 – 10. Unit 11 Learning Review.