Year 9 Path B	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Theme/Big Idea	Developing Proportional Reasoning and Geometric Understanding for Confident Problem Solving	Developing Algebraic Fluency and Numerical Precision for Accurate Mathematical Problem Solving	Developing Graphical Representation and Geometric Fluency for Analytical Problem Solving	Developing Mathematical Structure and Reasoning through Number, Probability and Algebra	Developing Analytical Skills through Trigonometry and Statistical Interpretation	Developing Precision and Spatial Reasoning through Transformations and Geometric Constructions
Content What are they learning? (including keywords)	**Unit 1** Students further develop their understanding of proportional relationships building confidence in applying mathematics to real-life contexts. They calculate fractions and percentages of amounts, the result of a percentage change, simplify and apply ratios, and solve direct proportion problems. **Unit 2** Students deepen their understanding of angle relationships and applying angle rules within triangles, quadrilaterals, parallel lines and polygons. They develop	**Unit 3** Students develop their understanding of linear equations, solving increasingly complex equations including two-step, three-step and those involving brackets and fractions. They learn to form equations from given situations, building confidence in representing relationships algebraically and solving problems systematically. **Unit 4** Students strengthen numerical fluency through rounding and estimation, supporting accurate approximations. They	**Unit 5** Students further develop their understanding of linear graphs, including interpreting and using gradient and y-intercept. They plot and interpret linear functions and begin to represent relationships graphically, building connections between algebra and coordinate geometry. **Unit 6** Students extend their knowledge of area, calculating areas of triangles, parallelograms, trapeziums and compound shapes. They explore circle geometry through	**Unit 7** Students further explore number structure through prime factorisation, expressing numbers as products of primes, and using these representations to find square and cube roots, developing deeper understanding of number relationships. **Unit 8** Students develop understanding of probability through equally likely outcomes, tree diagrams and relative frequency. They learn to model and analyse chance, comparing theoretical and experimental	**Unit 10** Students are introduced to trigonometric ratios and their use in right-angled triangles. They learn to select and apply the correct ratio to find missing sides and angles, developing confidence in solving geometric problems and understanding relationships within triangles. **Unit 11** Students develop their ability to represent and analyse data using stem and leaf diagrams. They calculate and interpret mean, median, mode and range, including from grouped data,	**Unit 12** Students develop their understanding of geometric transformations, including rotations, reflections, translations and enlargements. They learn to describe and perform transformations accurately, including combining multiple transformations, strengthening their spatial reasoning and understanding of congruence and similarity. **Unit 13** Students develop precision in geometry by constructing perpendicular bisectors,

	understanding , accuracy and fluency with Pythagoras' Theorem and begin to apply it to real-life problems. **Key vocabulary listed in Appendix 1**	are introduced to standard form for large and small numbers and perform calculations in standard form. Learners also evaluate powers and apply index laws, developing confidence in efficient and precise calculation methods. **Key vocabulary listed in Appendix 2**	circumference and area, and are introduced to volume and density, applying these skills to real-life problem-solving situations. **Key vocabulary listed in Appendix 3**	probabilities in real-world contexts. **<u>Unit 9</u>** Students extend their algebraic thinking using index laws, expanding and factorising single brackets. They construct and use formulae, substitute values and change the subject, building fluency in manipulating algebra to represent and solve problems. **Key vocabulary listed in Appendix 4**	and describe, compare and interpret distributions using measures of average and spread. **Key vocabulary in Appendix 5**	perpendiculars to and from lines, and angle bisectors using mathematical equipment. They build accuracy and reasoning, understanding the properties underpinning these constructions and their applications. **Key vocabulary in Appendix 6**
Skills How are they learning it?	Apply mathematical thinking to recognise proportional relationships, connecting fractions, percentages and ratio. Use accurate and efficient calculation strategies when working with fractions, percentages and ratio. Use geometric reasoning to identify properties of shapes and apply angle rules to solve problems. Apply reasoning to solve geometrical	Apply algebraic thinking to form, simplify and solve equations representing real situations. Use mathematical reasoning to explain steps in solving equations and justify methods used. Represent and communicate mathematical ideas clearly using algebraic notation and structured methods. Apply accurate calculation skills,	Apply algebraic thinking to represent relationships graphically using gradient and intercept. Use mathematical reasoning to interpret and explain patterns in graphs and linear functions. Apply geometric reasoning and accurate evaluation methods to calculate lengths and areas within shapes and solve problems.	Apply mathematical thinking to recognise structure in number, including prime factorisation and index laws. Represent, model and communicate possible outcomes clearly and systematically using tree diagrams. Use reasoning to explain probability outcomes and interpret relative frequency in real-life contexts.	Apply mathematical thinking to recognise relationships between angles and sides using trigonometric ratios. Use reasoning to select appropriate methods when solving problems involving sides and angles in triangles. Apply statistical thinking to compare and interpret distributions using averages and measures of spread. Represent and communicate	Apply spatial reasoning to perform and describe transformations accurately, including combined transformations. Represent and communicate geometric ideas clearly using correct notation, diagrams and descriptions. Apply precision when using mathematical instruments to construct accurate diagrams.

	problems, including deciding when and how to use Pythagoras' Theorem effectively.	including rounding, estimation and working with powers and standard form.	Apply accurate calculation methods to determine volume and density, understanding and using compound units correctly.	Apply algebraic thinking to expand, factorise and manipulate expressions and formulae.	mathematical ideas clearly using diagrams, tables and precise mathematical language.	
Key Questions	**What** is proportional reasoning, **why** is it important, and **how** can we use fractions, percentages and ratios to model and solve real-life problems effectively? What are the key angle rules in geometry, why do they always hold true, and how can we use them to solve problems? **What** is Pythagoras' Theorem and **how** can we decide when and how to use it to solve problems?	**How** can we use algebraic methods to form and solve equations from real situations, and **why** does this help us model problems effectively? **What** do indices represent, **why** are they important in calculations, and **how** can we evaluate and calculate with them accurately? **What** is standard form, **why** is it useful for representing very large and small numbers, and **how** do we use it correctly?	**How** can we represent relationships using graphs, and **why** is this useful for understanding patterns and connections? **What** do gradient and intercept represent, **why** are they important, and **how** can we use them to form and interpret equations of lines? **What** are the formulas for area, circles and volume, **why** do they work, and **how** can we apply them to solve real-life problems? **What** is density and its compound unit, **why** is it important to understand how units combine, and **how** can we calculate volume and density accurately?	**What** is prime factorisation, **why** is it a powerful way of revealing the structure of numbers, and **how** can we use it to efficiently determine square and cube roots? **What** are algebraic expressions and formulae, **why** can they be represented in different but equivalent forms, and **how** can we manipulate and move between these representations to solve problems efficiently? **What** is probability, **why** do outcomes vary in different situations, and **how** can we model and interpret them using tree diagrams and relative frequency?	**What** are trigonometric ratios, **why** are they important in right-angled triangles, and **how** can we use them to find missing sides and angles? **How** can we represent and analyse data using stem and leaf diagrams and **what** is it about the representation that gives us detail and overview at the same time? **What** do measures of average and spread tell us about a data set, **why** is this important, and **how** can we use them to interpret and compare distributions?	**What** are transformations, **why** do they preserve or change properties of shapes, and **how** can we describe and combine them accurately? **What** do we mean by invariance and **how** do we identify when and where it happens? **What** are the key properties behind constructions such as bisectors and perpendiculars, **why** do they work, and **how** can we apply them?

Assessment (specific assessed piece(s); milestone(s))	Unit 1 Learning Review Unit 2 Learning Review Assessment 1 covering unit 1. QLA sheets provided from this.	Unit 3 Learning Review Unit 4 Learning Review Assessment 2 covering Unit 2. QLA sheets provided from this.	Unit 5 Learning Review Unit 6 Learning Review Units 3 and 4, QLA sheets provided from this.	Unit 7 Learning Review Unit 8 Learning Review Unit 9 Learning Review Assessment 4 covering Units 5, 6 and 7. QLA sheets from this	Unit 10 Learning Review Unit 11 Learning Review Assessment 5 covering Units 8 and 9. QLA sheets from this	Summer Term assessments (Non-calculator and Calculator papers). QLA sheets provided from these. Unit 12 Learning Review Unit 13 Learning Review