Year 9 Path C	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 and Geometric Reasoning for Advanced Mathematical Connections and Problem Solving	Developing Algebraic Structure, Pattern Recognition and Probabilistic Reasoning for Deeper Mathematical Understanding	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 single or repeated 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.	**Unit 3** Students consolidate and extend their understanding of forming and solving linear equations. They are introduced to the notation and representation of linear inequalities, as well as formal solving of these. Students construct and solve linear simultaneous equations, developing fluency in working with multiple variables and strengthening their ability to model and solve increasingly complex problems. **Unit 4** Students develop accuracy and efficiency in numerical methods,	**Unit 5** Students extend their understanding of linear graphs by interpreting gradient and y-intercept and using these to find equations of lines. They explore parallel and perpendicular gradients and solve simultaneous equations graphically. Learners are introduced to quadratic and cubic graphs, developing understanding of how algebraic relationships are represented visually. **Unit 6** Students consolidate their understanding of area, including	**Unit 7** Students develop their understanding of sequences by generating and describing quadratic and geometric sequences. They learn to find and use nth term rules, recognising patterns and relationships within sequences and building connections between algebra and number structure. **Unit 8** Students develop understanding of probability through equally likely outcomes, tree diagrams and relative frequency. They learn	**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 extend their knowledge of statistical representation and analysis through cumulative frequency graphs and box plots. They learn to interpret, describe and compare	**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,

	They develop understanding , accuracy and fluency with Pythagoras' Theorem and begin to apply it to real-life problems. **Key vocabulary listed in Appendix 1**	including rounding and estimation. They extend their understanding of standard form and perform calculations using it, alongside evaluating powers and applying index laws. Students are introduced to surds, simplifying and calculating expressions to deepen understanding of exact values and number structure. **Key vocabulary listed in Appendix 2**	compound shapes and circles, before extending to sectors, segments and arc length. They apply these skills in increasingly complex contexts and continue developing understanding of volume and density, strengthening their ability to solve multi-step problems in mathematical and real-life situations. **Key vocabulary listed in Appendix 3**	to model and analyse chance, comparing theoretical and experimental probabilities in real-world contexts. **<u>Unit 9</u>** Students deepen their algebraic fluency by applying index laws, expanding brackets and factorising into a single bracket, and proving identities. They construct and manipulate formulae, including changing the subject, developing accuracy and confidence in working with algebraic relationships. **Key vocabulary listed in Appendix 4**	distributions using measures of spread and central tendency, developing confidence in analysing data and communicating conclusions clearly. **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.	Apply algebraic thinking to form, simplify and solve equations and simultaneous equations representing real situations. Use mathematical reasoning to explain steps in solving equations and simultaneous equations and justify methods used.	Apply algebraic thinking to represent and interpret relationships using graphs, including using gradient and intercept, and solving simultaneous equations graphically. Use mathematical reasoning to identify and explain relationships between gradients, including	Apply mathematical thinking to recognise patterns and relationships in sequences, including forming and using nth term rules. Represent, model and communicate possible outcomes clearly and systematically using tree diagrams.	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 represent data using cumulative	Apply spatial reasoning to perform and describe transformations accurately, including combined transformations. Represent and communicate geometric ideas clearly using correct notation, diagrams and descriptions.

	Use geometric reasoning to identify properties of shapes and apply angle rules to solve problems. Apply reasoning to solve geometrical problems, including deciding when and how to use Pythagoras' Theorem effectively.	Represent and communicate mathematical ideas clearly using algebraic notation and structured methods. Apply accurate calculation skills, including rounding, estimation and working with powers, standard form and surds.	parallel and perpendicular lines. Apply geometric reasoning to calculate areas of, and lengths within, increasingly complex shapes, including sectors and segments. Apply accurate calculation methods to determine volume and density, understanding and using compound units correctly.	Use reasoning to explain probability outcomes and interpret relative frequency in real-life contexts. Apply algebraic thinking to expand, factorise and manipulate expressions and formulae.	frequency graphs and box plots. Use mathematical reasoning to interpret, analyse and compare distributions using measures of central tendency and spread. Represent and communicate mathematical ideas clearly using diagrams, tables and precise mathematical language.	Apply precision when using mathematical instruments to construct accurate diagrams.
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?	**What** is the difference between equations and inequalities, **why** does it matter, and **how** can we solve and represent them? **How** are simultaneous equations different from the usual equations, **how** do we solve them and **why** is this important for modelling relationships involving two variables? **What** do indices represent, **why** are they important in calculations, and **how** can we evaluate and calculate with them accurately?	**How** can graphs be used to represent and solve equations, and why is this useful for understanding relationships between variables? **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 key formulas for circles, sectors, arc length and volume, **why** do they work, and **how** can we apply them in complex problems?	**What** patterns exist in sequences, **why** are nth term rules useful, and **how** can we generate and describe them? **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 algebraic expressions and formulae, **why** can they be represented in different but equivalent forms, and **how** can we manipulate and move	**What** are trigonometric ratios, **why** are they important in right-angled triangles, and **how** can we use them to find missing sides and angles? **What** is cumulative frequency, **how** can we represent data using cumulative frequency graphs and box plots, and **why** are these useful for analysing distributions? **What** do measures of spread and central tendency tell us about data, **why** is this important, and **how** can we compare	**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?

		What is standard form, **why** is it useful for representing very large and small numbers, and **how** do we use it correctly? **What** are surds, **why** do we use them to represent exact values, and **how** can we simplify and calculate with them effectively?	**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?	between these representations to solve problems efficiently?	distributions effectively?	
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