Module/Unit of Learning	Taught During	What will students learn?	How does this help to build a broad and strong foundation?	Links to other Subjects
Algebraic Thinking	**Autumn Term 1**	Students will begin to recognise the importance of using algebraic generalisations to define mathematical relationships then learn how to manipulate different representations to express them in the simplest way possible.	Developing their foundation of algebraic manipulation will enable students to work on the more complex algebraic work in Year 9. They will also draw on these skills through Year 8 curriculum by interleaving with a variety of topics areas.	Formulae used will be related to formulas used in Science.
Fraction Arithmetic	**Autumn Term 1 & 2**	Learning about the fundamental concepts to develop a deep understanding of calculating with fractions, learning why effective calculation methods work and how they can be applied in different contexts to solve real-life problems. Students here are building on their knowledge from Year 7 to work with operations. A core grasp of fractions is key successful life skills beyond Penrice working with maths everyday	Students will have opportunities to use their fraction knowledge to apply with a variety of topics, such as, area, perimeter and averages.	
Algebraic Fractions	**Autumn Term 2**	Students will have the opportunity to combine their key concepts from both previous topics and have a short introduction into Algebraic fractions and how to calculate with them, linking back to their algebraic thinking module and fractional work.	Strengthening their understanding each of the key concepts, in a combined setting will help to develop their ability to master these skills.	
Equations	**Autumn Term 2 & Spring 1**	Students will learn how to set up and solve a range of equations to obtain solutions to a variety of problems within both concrete and abstract contexts, manipulating algebraic statements where appropriate to simplify the equation.	A focus on solving linear equations here in Year 8 and the methods needed to do this, will leave students with the skills to tackle further quadratic equations in Year 9 and 10 and look at how equations can be interleaved with area and perimeter.	

Pride **Respect** **Success**

Circles & Sectors	**Spring 1 & Spring 2**	Students learn how to find the area and circumference of a circle and sectors, whilst building on their knowledge of area from KS2 and Y7, looking at further examples to include part-shapes and compound examples. The world of Circle theorems will then be introduced, focussing on two of the key theorems, with others covered in Y9.	Students will explore the unique world of the circle, treading along steps of the ancients to discover Pi.	Art
Sequences	**Spring 2**	Student are now learning about more abstract concepts in maths by exploring sequences. Differences between a pattern, progression and series, exploring different arithmetic and geometric progressions and special sequences such as the Fibonacci sequence and the sequence of triangular numbers. Concluding with generalising sequences algebraically, graphing them and discovering the proportional properties of linear relationships.	It is essential that students develop their knowledge of sequencing to build into linear graphs next, where they are shown the link between a sequence and its graph.	Art
Linear Graphs	**Summer 1**	Arithmetic progressions, discovering why and how the terms of a linear sequence can be plotted on an xy axis to form a straight line graph. Abstract ideas such as a line being infinite in length and extending into the negative quadrants, understanding why representing linear relationships algebraically can simplify the definition of these relationships and how to define/use generalisations.	A core foundation in graphing is needed to push further in Year 9 and 10 with non-linear relationships. Students need to understand the story a graph tells to further make these links in future algebraic study.	

Percentages	**Summer Term 2**	Students will begin to discover their broad use in the real world and gain an appreciation of the multiplicative properties of percentages. Students are building on their knowledge from Year 7 and making the stretch this year to reverse percentage work. Percentages is an going interleaved topic throughout their further years in maths .	This module will show students how percentages are used in real-life by providing them an opportunity to explore interest rates and how they relate to banking and real-life finances.	Geography
Compound Measures	**Summer Term 2**	Starting with exploring metric measurements and converting between them, students will use this information to link their Year 8 work with their Science studies (Pressure). Students will also study the relationship between distance and speed.	This module also to build the fundamental skills for Y9 and Y10. Students will not only convert metric measures for length, but area and volume providing them an insight to the world of similar shapes and congruency.	Science
Distance-Time Graphs	**Summer Term 2**	Extending on their previous module and the work that students completed within their linear graph module, students will draw and interpret distance-time graphs.	Students will then be provided an opportunity to transpose this knowledge and use it to link to their graph work.	Science