

Module/Unit of Learning	Taught During	What will students learn?	How does this help to broaden horizons?	Links to other Subjects
Surds (Higher)	Autumn term 1	Students will take their previous indices knowledge on further with irrational numbers and surd work.	Further Maths students will extend their learning by studying how to simplify and calculate with irrational numbers.	
HCF, LCM and Prime numbers (Foundation)	Autumn term 1	Revisiting work from year 7, students will become fluent with the language of factors, multiples, and prime numbers and hone their calculator skills.		
Algebraic fractions (Higher)	Autumn term 1	After recapping numerical fractions from year 7, students will use their factorising skills to simplify algebraic fractions. Students will also be able to perform all four operations using algebraic fractions.		Science
Fractions (Foundation)	Autumn term 1	After recapping basic fractions from year 7, students will develop their learning by performing all four operations with fractions including working with mixed numbers.		Science
Simplifying Algebra (Foundation)	Autumn term 1	Students have spent time in year 7 and 8 representing numerical rules in general form and manipulating algebraic expressions. This unit will continue to build on that. Students will learn to expand and factorise up to cubics.		
Pythagoras (All groups)	Autumn term 1	Students will be revisiting number properties to apply them to Pythagoras problems, finding the lengths of sides in right angled triangles.	Students will have an opportunity to discover the history of Pythagoras as well as opportunities to create Pythagorean trees and Spirals and exploring the world of fractals.	Art
Right angled trigonometry (Higher)	Autumn term 2	Students will link their Pythagoras skills to discover Trigonometry in the 2D plane, seeing how it is to the ratio of angles and sides of right-angled triangles.	Students will discuss the real-world application of these skills, the careers they are used in and their impact in everyday life.	Engineering
Angles (Foundation)	Autumn term 2	Foundation students will have the opportunity to reflect on their learning from Year 8 and will begin to combine topics to extend their understanding of angles learning about angle facts in parallel lines.		Art
Algebraic graphs (All groups)	Autumn term 2	All students will develop calculator skills to assist with plotting and interpreting graphs of quadratic functions. Higher students will be able to identify cubic, exponential and reciprocal graphs.		Science Geography
Linear and quadratic equations (All groups)	Autumn term 2	Higher students will be exploring the various ways of solving equations, developing their understanding of linear in the quadratic context by using the quadratic formula and completing the square. All students will be drawing on previous knowledge of linear equations and extending this to quadratic equations and problem solving.		Science



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Percentages	Spring term 1	Building on the knowledge of calculating percentages attained in Year 8, students will begin to discover their broad use in the real world and gain an appreciation of the multiplicative properties of percentages.	Opportunities for students to exploring real applications of percentages including banking, mortgages and loans.	Science Geography
Mock Exams	Spring term 1			
Inequalities	Spring term 1	Students will start by exploring the difference between inequalities and equations. Students will build on their previous algebra skills to apply them to a variety of different inequality topics. Higher students will extend their knowledge by solving quadratic inequalities.		
Analysing Data	Spring term 2	Students will revise work completed in year 6 and 7 on averages, discuss why each one is important and when each can be used at its best. They will discover new ways to compare and represent data with the use of frequency diagrams, stem and leaf diagrams, quartiles and box-plots.		Geography History Science
Area and volume	Spring term 2	Building on previous knowledge from Year 8, students will be given the opportunity to revisit, revise and extend their understanding of surface area and volume of three-dimensional shapes.		
Sequences	Spring term 2	Students will be introduced to special sequences such as the Fibonacci sequence and triangular numbers. All students will explore linear sequences and be fluent with key words. Higher students will extend their learning with quadratic sequences.	Further Maths students will have an opportunity to explore limits of sequences and begin to make links with A Level.	History
Circles (Foundation) Circle Theorems (Higher)	Summer term 1	Students learn how to find the area and circumference of a circle and sectors. Higher students will visit the world of circle of theorems.	Students will explore the unique world of the circle, treading along steps of the ancients to discover Pi.	Art
Simultaneous equations	Summer term 1	All students will solve linear simultaneous equations using written and graphical methods. Higher students will explore quadratic and other non-linear simultaneous equations.	Further Maths students will extend their learning by studying simultaneous equation using three unknowns and see how it is used at A Level.	
Displaying data	Summer term 2	Students will continue their work from earlier this year on analysing data. Students will focus on methods to display data, including scatter graphs, time series, and frequency polygons. Higher students will extend their learning by exploring cumulative frequency graphs, histograms and box plots.	Students will learn to develop a critical eye looking at how data can be used to manipulate.	Science Geography PE
Mock exams	Summer term 2			
Speed and graphs	Summer term 2	All students will be able to work with speed distance and time and draw and interpret distance time graphs. Higher students will interpret velocity/ time graphs by exploring gradients and area under graphs.		Science