



In sequencing the curriculum, we have started with topics that would be familiar to students from primary school and from the work covered in year 7. We build from the more concrete to the more abstract concepts and look to link topics together through the year and over the 5-year curriculum.

Module/Unit of Learning	Taught During	What will students learn?	How does this help to broaden horizons?	Links to other Subjects
Calculations and Number	Autumn term 1	Students will learn how to round, estimate and directed number. Highest common factor and lowest common multiple will be revisited as a concept, this has first been covered in year 7.	A strong knowledge of directed number is key for concepts such as temperature. Confidence in finding a HCF and LCM from any method allows students to be successful in fraction and ratio work. HCF and LCM often form part of real-life problem solving.	Geography and science-temperature. Estimating and rounding - technology.
Area and Volume	Autumn term 1	Students will learn how to calculate area of basic shapes- squares, rectangles, triangles and parallelograms. They will then link this to calculating volume and surface area of basic 3D shapes- cubes, cuboids and prisms. The compound shape section encourages students to link together different parts of their learning.	Shape is a real-life concept that is heavily used in the workforce. The problem-solving skills taught as part of this unit encourage students to link together what they know and start to build skills for approaching problems that are unfamiliar.	Technology and Science
Circles	Autumn term 1	Students start with vocabulary of a circle then link this to finding area and circumference of circles. This is extended in to finding the area and perimeter of parts of a circle $\frac{1}{2}$ $\frac{1}{4}$'s.	Students will explore how Pi was discovered link to history and the ancient world.	Technology and history.
Statistics graphs and charts	Autumn term 2	Students will revisit representing data that has been seen in the primary curriculum and in year 7. Students will learn how to draw and interpret bar charts, pie charts, vertical line graphs and frequency polygons. They will use scatter graphs to make predictions based on the data. We will also revisit drawing angles.	Being able to interpret and interrogate data is a skill for understanding the world.	Science, Geography and History
Expressions and Equations	Autumn term 2	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.	Science
Ratio	Spring term 1	Exploring how any two numbers can be linked through multiplication and how variables with a proportional relationship can be represented diagrammatically in real-life contexts.	Exploring how ratio can be used and applied in problem solving questions.	Science and Technology (especially when looking at recipes in food)
Real life graphs	Spring term 1	Students will draw distance time graphs and use this to calculate speed. They will also learn how to interpret a distance time graph.		Science
Lines and Angles	Spring term 2	Building from the Primary curriculum, students will consolidate their understanding of the fundamental aspects of angle work focusing on the use of mathematical language to explain and justify mathematical thinking.	Students will have the opportunity to link to previous topics such as solving linear equations.	Technology



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Probability	Spring 2	Students will apply their fraction and decimal knowledge to probability. They will cover the key idea that all probabilities sum up to 1 and practice listing outcomes. They will examine experimental probability and calculate expected outcomes.	Real life applications of probability help with understanding the bases of financial products such as how insurance works.	Science
Indices, Powers and Roots	Summer 1	Students will recap powers and roots and from earlier in the year. They will then cover the laws of indices and start to apply them to both numerical and algebraic questions. This unit will build on the numbers and expressions and equations units from earlier in year 8.		
Linear Graphs	Summer 1	Students will start by looking at 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.	Science- Physics
Fractions Decimals and Percentages	Summer 2	Recognising and utilising the equivalence of fractions, decimals and percentages to compare proportions and gain fluency in moving from one representation to another.	Allowing an opportunity for students to use their core skills and link their previous topics together and consolidate their fundamental skills.	Science, Geography and History
Quadratic Graphs	Summer 2	Students will take their learning from earlier in year 8 on linear graphs and discover that not all relationships can be represented linearly. They will explore quadratic, cubic and reciprocal relationships and how these can be visually represented in graph form. They will move on from solving equations algebraically to solving them graphically.	Knowing how to operate a calculator well can help students across many subjects this unit focuses on the different calculator modes and how to make best use of your calculator.	Science and Geography,
Percentages	Summer 2	Students are building on their knowledge from primary school and making the stretch this year to reverse percentage work. Student will focus on percentage increase and decrease with and without a calculator. Percentages is an ongoing interleaved topic throughout their further years in maths		Science and Technology