

## MATHS CURRICULUM PLAN 2020-2021

### Year 8

Term	Topic	British Values/Cross Curricular/ Enrichment	Assessment (What is being assessed?)	Main Key skills/ Learning Objectives (Students will be able to...)
Autumn 1	<ol style="list-style-type: none"> <li>1. Number</li> <li>2. Area and Volume</li> </ol>	Individual Liberty - students exercise their freedom in exploring new methods and concepts.	End of half term assessment	<ul style="list-style-type: none"> <li>● Calculate using decimals and estimation</li> <li>● Use the four operations to calculate with negative numbers</li> <li>● Calculate with powers and roots, Incorporating brackets</li> <li>● Work with Multiples and Factors, using index notation and finding HCF and LCM</li> <li>● Find the area of triangles and quadrilaterals</li> <li>● Find the volume and surface area of cubes and cuboids</li> <li>● Sketch nets of 3D shapes</li> </ul>
Autumn 2	<ol style="list-style-type: none"> <li>1. Expressions and Equations</li> <li>2. Real Life Graphs</li> </ol>	The Rule of Law - students focus on the mathematics of speed limits and alcohol units, as well as understanding the need to follow universal algebraic rules and conventions.	End of Autumn term assessment	<ul style="list-style-type: none"> <li>● Write and substitute into algebraic expressions</li> <li>● Change the subject of a formula</li> <li>● Simplify expressions with brackets, including factorising and expanding</li> <li>● Calculate using algebraic powers</li> <li>● Solve equations using the balancing method</li> <li>● Draw, use and Interpret conversion graphs, distance-time graphs, line graphs and real life graphs</li> </ul>
Spring 1	<ol style="list-style-type: none"> <li>1. Decimals and Ratio</li> <li>2. Lines and Angles</li> </ol>	Mutual Respect - students are encouraged to believe in their own ability in order to reach their potential in Mathematics.	End of half term assessment	<ul style="list-style-type: none"> <li>● Work with decimals and rounding</li> <li>● Multiply larger numbers, decimals and by 0.1 and 0.01</li> </ul>

				<ul style="list-style-type: none"> <li>● Add, subtract and divide decimals, including dividing by 0.1 and 0.01</li> <li>● Solve ratio and proportion problems involving decimals</li> <li>● Know and use properties of quadrilaterals</li> <li>● Solve problems involving angles in shapes and parallel lines</li> <li>● Solve angle problems using algebra</li> </ul>
Spring 2	1. Calculating with Fractions	Democracy - Through the study of maths, we encourage learning and behaviour strategies that allow all students a fair chance to answer and to explain their methods.	End of Spring term assessment	<ul style="list-style-type: none"> <li>● Add, subtract, multiply and divide fractions</li> <li>● Convert between fractions, decimals and percentages</li> <li>● Convert mixed numbers to improper fractions</li> </ul>
Summer 1	1. Straight Line Graphs 2. Fractions, Decimals and Percentages	Individual Liberty -Students are encouraged to develop their thinking skills when analysing mathematical questions which will enable them to think through ideas critically.	End of half term assessment	<ul style="list-style-type: none"> <li>● Plot straight line graphs</li> <li>● Find midpoints of straight line graphs</li> <li>● Know and use the equation of a straight line, <math>y=mx+c</math></li> <li>● Solve proportion problems involving fractions, decimals and percentages</li> <li>● Work out percentage increase and decrease, including understanding and using a multiplier</li> </ul>
Summer 2	1. Statistics, Graphs and Charts	Democracy - students study the creation of questionnaires and examine bias and sampling methods. Students consider the consequences, advantages and disadvantages of how mathematics is used and abused, and how data can be used to change perception, opinion, action and cause reaction.	End of year 8 assessment	<ul style="list-style-type: none"> <li>● Understand different types of data, and how to collect and represent it</li> <li>● Draw and interpret pie charts, two way tables, stem and leaf diagrams, line graphs and scatter graphs</li> <li>● Work with grouped data</li> <li>● Find averages and range from graphs and tables, including for grouped data</li> </ul>