

Curriculum Map 2021/2022

YEAR 10 MATHS FOUNDATION

Mathematics is an interconnected subject in which students need to be able to move fluently between representations of mathematical ideas. The programme of study is organised into apparently distinct domains, but students should build on key stage 3 and connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge in science, geography, computing and other subjects.

The curriculum is taught through the mathematical strands of: Number and Ratio, Algebra, Geometry and Measures, Statistics and Probability

	Autumn 1a	Autumn 1b	Spring 2a	Spring 2b	Summer 3a	Summer 3b
CONTENT <i>Declarative / core / powerful Knowledge – ‘Know What’</i>	Recovery Curriculum in preparation for Year 10	Algebra: Simultaneous Equations	Percentage Growth and Decay	Trigonometry and Bearings	3D Shape	Statistics
Intent	These topics need to be secure in order to access the topics being covered this year. We understand that learning has been disrupted over the last two years and these skills will ensure students have the skills to access the curriculum.	Algebra is the language of maths. As the complexity of problems increase, as does the knowledge of algebra. This half term is vital for manipulating algebra in more advanced settings.	Percentage growth and decay attributes itself to other areas of mathematics. Having a good understanding of this allows chances of incorporating into practice later in the year.	Trigonometry and bearings appear together as, for more able students, it allows more complex questions to be practiced which mix these two skills together.	Students use the prior understanding of area of shape to work with volumes and surface areas.	Students extend their knowledge of averages to include situations when data is presented in a table.
Skills <i>Procedural Knowledge – ‘Know How’</i>	Students will be able to: Use negative numbers in various contexts	Students will be able to: Solve complex linear equations Rearrange formula	Students will be able to: Revisit converting between fraction, decimals and percentages	Students will be able to: Use trigonometry in 2D right angled triangles	Students will be able to: Draw the net of a prism Use the language of 3d shapes	Students will be able to: Revisit finding averages from lists

	<p>Use ratio and proportion in context</p> <p>Find the area of shapes</p>	<p>Simplify the sum of algebraic fractions in simple cases</p> <p>Solve linear simultaneous equations</p>	<p>Recap manipulating fractions</p> <p>Recap finding percentages of amounts</p> <p>Find the value after a percentage in/decrease</p> <p>Find the original value given a in/decreased value</p>	<p>Use trigonometry without the aid of a calculator</p> <p>Solve problems involving bearings</p> <p>Construct triangles using a pair of compasses</p> <p>Solve loci problems</p>	<p>Find the surface area of prisms</p> <p>Find the surface area of simple non-prisms</p> <p>Find the volume of prisms and cylinders</p> <p>Convert between units of area and volume.</p>	<p>Find the average from a frequency table</p> <p>Find the average from a grouped frequency table</p> <p>Extend trigonometry use from earlier in the year</p> <p>Draw and interpret real life graphs</p>
Key Questions	<p>What units should be used for the area of a shape?</p> <p>Can you think of examples of situations that are not directly proportional?</p>	<p>How many equations do you need to solve for 2 unknown variables?</p> <p>What is the difference in solving an equation and rearranging a formula?</p>	<p>Can you use a diagram to show how to add fractions together?</p> <p>Can you find different ways to find percentage of amounts?</p>	<p>How is trigonometry related to similar shapes?</p>	<p>How does drawing the net of a shape aid finding the surface area of a shape?</p> <p>Can you show why the volume of a prism is the cross section area multiplied by the length with the aid of a diagram?</p>	<p>Why can we not find the exact mean average from a grouped frequency table?</p>
Assessment	<p>Students will be assessed through a retrieval quiz every 2 weeks in class. A half termly assessment will be completed in class that covers all the content taught within the half term.</p>	<p>Students will be assessed through a retrieval quiz every 2 weeks in class. A half termly assessment will be completed in class that covers all the content taught within the half term.</p>	<p>Students will be assessed through a retrieval quiz every 2 weeks in class. A half termly assessment will be completed in class that covers all the content taught within the half term.</p>	<p>Students will be assessed through a retrieval quiz every 2 weeks in class. A half termly assessment will be completed in class that covers all the content taught within the half term.</p>	<p>Students will be assessed through a retrieval quiz every 2 weeks in class. A half termly assessment will be completed in class that covers all the content taught within the half term.</p>	<p>Students will be assessed through a retrieval quiz every 2 weeks in class. A half termly assessment will be completed in class that covers all the content taught within the half term.</p>
Links to careers/wider world			<p>Interest rates</p> <p>Depreciation of value</p>	<p>Astronomy</p> <p>Orienteering</p>	<p>Planning involving capacity</p>	<p>Data analytics management</p>

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