



Curriculum Map

Subject: **Mathematics**

Year group: **Year 10**

This document maps the Year 10 Curriculum in Mathematics.

The colours denote: Foundation Tier only All students Higher Tier Only May be deferred to Year 11

Students who study for the Edexcel Level 3 Award in Algebra will focus on algebraic topics for that qualification until May. They have usually studied this content in Year 9.

	Unit 1 <i>September – November</i> <i>(9 weeks)</i>	Unit 2 <i>November – January</i> <i>(9 weeks)</i>	Unit 3 <i>January – March</i> <i>(9 weeks)</i>	Unit 4 <i>April – June</i> <i>(6 weeks)</i>	Unit 5 <i>June – July</i> <i>(3 weeks)</i>
Content	<u>GEOMETRY & MEASURE</u>	<u>NUMBER, RATIO & PROPORTION</u>	<u>ALGEBRA</u>	<u>STATISTICS & PROBABILITY</u>	<u>CONSTRUCTIONS & TRANSFORMATIONS</u>
Declarative Knowledge – ‘Know What’	<p style="color: blue;">Coordinates</p> <p style="color: blue;">Properties of circles</p> <p style="color: blue;">Reading scales and timetables</p> <p style="color: blue;">Constructions</p> <p>Geometric reasoning</p> <p>Angles in parallel lines</p> <p>Exterior and interior angles in polygons</p> <p>Perimeter and area</p> <p>Pythagoras’ Theorem</p> <p>Properties of 3D shapes</p> <p>Compound Measures</p> <p style="color: green;">Trigonometry in right-angled triangles</p> <p style="color: green;">Similar shapes with linear scale factors</p> <p style="color: green;">Surface area and volume of prisms</p> <p style="color: red;">Circle Theorems</p> <p style="color: red;">Trigonometry in 3D</p> <p style="color: red;">Congruence proofs</p>	<p>Mixed arithmetic</p> <p>Properties of number</p> <p>Decimals</p> <p>Fractions</p> <p>Percentages</p> <p>Converting between fractions, decimals and percentages</p> <p>Ratios</p> <p>Laws of indices</p> <p style="color: green;">Standard form</p> <p style="color: green;">Direct and inverse proportion</p> <p style="color: green;">Working with upper and lower bounds</p> <p style="color: red;">Limits of accuracy</p>	<p>Manipulate and simplify algebraic expressions</p> <p>Laws of indices</p> <p>Order of operations</p> <p>Expanding brackets</p> <p>Factorising expressions</p> <p>Linear sequences</p> <p>Linear equations</p> <p>Inequalities</p> <p>Straight line graphs</p> <p>Quadratics graphs</p> <p>Using <i>and rearranging</i> formulae</p> <p style="color: green;">Quadratic and Fibonacci Sequences</p> <p>Simultaneous equations</p> <p>Drawing and sketching non-linear functions</p> <p style="color: red;">Iteration</p>	<p>Find averages and the range from grouped and ungrouped data.</p> <p>Displaying data in charts and graphs</p> <p>Sampling methods</p> <p>Draw and interpret scatter graphs</p> <p>Work out the probability of events</p> <p style="color: green;">Draw and interpret cumulative frequency diagrams.</p> <p style="color: green;">Draw and interpret box plots</p> <p style="color: green;">Drawing and interpreting histograms</p> <p style="color: red;">Product rule for counting</p>	<p>Construct triangles using ruler, protractor and compass.</p> <p>Construct perpendicular bisector and angle bisectors.</p> <p>Transform shapes by:</p> <ul style="list-style-type: none"> ● Translating ● Reflecting ● Rotating ● Enlarging



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<p>Skills</p> <p><i>Procedural Knowledge – ‘Know How’</i></p>	<p>Learn to apply angle properties to solve problems in different contexts, including bearings. Learn to select and apply appropriate formulae to solve area, surface area and volume problems. Learn a range of techniques to solve problems in right-angled triangles. Learn to visualise and represent 3D shapes in 2D form. Learn to select and apply appropriate formulae to solve problems involving speed, density and pressure.</p>	<p>Learn to apply numeracy problems to different contexts including utility bills. Learn to recognise different types of numbers including squares, cubes and roots. Learn to work with different types of numbers including fractions, decimals and percentages in a variety of contexts. Perform calculations and problem solving involving ratio and proportion. Learn to simplify and solve problems involving indices and standard form. Learn to use bounds to solve problems.</p>	<p>Learn to form, use, simplify and rearrange algebraic expressions. Apply skills of expanding brackets to 2 or more brackets Learn a range of skills to factorise linear and quadratic expressions. Learn to generate nth term rules for sequences and to apply to problem solving Learn to form, derive and solve equations to solve problems in different contexts. Learn methods for drawing graphs from an equation. Learn the properties of straight line graphs and apply to solve problems and interpret meaning in practical contexts</p>	<p>Learn to apply methods for averages to compare distributions. Learn about the advantages and disadvantages of using the different sampling and data collection methods. Learn how to apply knowledge of different charts and diagrams to interpret data in different contexts. Learn to apply different probability methods to solve problems involving one or more events in a variety of contexts. Learn to be aware of and identify the limitations of different ways of representing data.</p>	<p>Learn to use appropriate mathematical equipment and methods to complete accurate constructions. Learn to apply techniques for perpendicular and angle bisectors to complete other constructions. Learn to apply construction techniques to identify points and regions that solve problems. Learn to apply knowledge of 4 transformations to identify and communicate what transformation has taken place.</p>
<p>Key Questions</p>					
<p>Assessment</p>	<p>Written assessment in lesson. Early November – within first two weeks after October Half Term.</p>	<p>Written assessment in lesson. Late January – about 3 weeks after Christmas break.</p>	<p>No formal Unit 3 assessment. Year 10 Trial Exam is at end of unit and covers work on Units 1 – 3.</p>	<p>No formal Unit 4 assessment</p>	<p>No formal Unit 5 assessment</p>
<p>Literacy/Numeracy/ SMSC/Character</p>	<p>Understanding and interpreting worded questions in real-life contexts. Aspiration, Resilience, Initiative, Confidence</p>	<p>Understanding and interpreting worded questions in real life contexts. Aspiration, Resilience, Initiative, Confidence</p>	<p>Understanding and interpreting worded questions to identify and apply appropriate algebraic skills. Aspiration, Resilience, Initiative, Confidence</p>	<p>Understanding and interpreting worded questions Aspiration, Resilience, Initiative, Confidence</p>	<p>Interpret specific instructions to choose and apply appropriate mathematical techniques. Tolerance, Resilience, Confidence</p>