

Maths KS4 Foundation Curriculum Map

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p style="text-align: center;">Year 10</p> <p>The year 10 curriculum gives students the opportunity to revisit key topics allowing them to recap and extend their learning on these key topics. Each half-term has a key focus covering: number; algebra; probability; geometry; similarity and finally data handling. The focus will be on initially ensuring fluency on all topics. Students will then be able to attempt problem-solving questions which require knowledge from several domains.</p>	<p style="text-align: center;">Number</p> <p>Knowledge Content Factors, multiples and primes; powers and roots; indices; standard form; sequences</p> <p>Threshold Concepts</p> <ul style="list-style-type: none"> • Every positive integer (greater than 1) has a unique prime factor decomposition. • Standard form is useful in comparing numbers of varying magnitudes. <p>Link to Prior Learning Builds on knowledge of prime factorisation and index laws</p> <p>Enquiry Question A sequence starts: 5, 10, ... Find the third term if the sequence is</p> <ol style="list-style-type: none"> Linear Geometric Fibonacci 	<p style="text-align: center;">Applications of algebra</p> <p>Knowledge Content Algebra KS3 review; quadratics; quadratic graphs; simultaneous equations</p> <p>Threshold Concepts</p> <ul style="list-style-type: none"> • A quadratic expression is a polynomial of degree 2. • Simultaneous equations can be solved algebraically or graphically. <p>Link to Prior Learning Builds on knowledge of quadratics and equation solving</p> <p>Enquiry Question $y = 3x + 4$ $x + y = 10$</p> <p>Show how this pair of simultaneous equations can be solved</p> <ol style="list-style-type: none"> Algebraically Graphically 	<p style="text-align: center;">Percentages and probability</p> <p>Knowledge Content FDP KS3 review; percentages; probability, sets, venn and sample space diagrams</p> <p>Threshold Concepts</p> <ul style="list-style-type: none"> • Probably can be represented a fraction, decimal or percentage. • Samples spaces represent different ways of interpreting probability problems. <p>Link to Prior Learning Builds on knowledge of FDP and probability</p> <p>Enquiry Question Ben rolls a fair 6-sided die with the numbers 1 to 6. He then spins a 5 sided-spinner with the numbers 2 to 6. He then multiplies his two numbers to get a score of 16. Adam plays the same game, find the probability that Adam gets a higher score.</p>	<p style="text-align: center;">Geometry</p> <p>Knowledge Content Transformations; 2D shapes and circle geometry; 3D shapes; volume and surface area</p> <p>Threshold Concepts</p> <ul style="list-style-type: none"> • There can be several ways of describing a shapes transformation. • Pi (π) is a fixed number that is the constant ratio between the circumference and diameter of any circle. <p>Link to Prior Learning Builds on knowledge of 2D/3D shape properties (area, volume etc.)</p> <p>Enquiry Question A point transforms from F (3,3) to F' (-3,-3). Describe the single transformation from F to F'. List as many possible answers as you can.</p>	<p style="text-align: center;">Similarity</p> <p>Knowledge Content Ratio review; compound measures and direct and inverse proportion; Pythagoras' theorem review; similarity and trigonometry</p> <p>Threshold Concepts</p> <ul style="list-style-type: none"> • Proportion problems can be represented algebraically, graphically or in a table. • Pythagoras' theorem states that that for a right-angled triangle $a^2 + b^2 = c^2$ where c is the hypotenuse <p>Link to Prior Learning Builds on knowledge of ratio and trigonometry</p> <p>Enquiry Question A right-angled, isosceles triangle has a hypotenuse of 20cm. Find the exact length of the other two sides of the triangle.</p>	<p style="text-align: center;">Data Handling</p> <p>Knowledge Content Averages and range; data collection and sampling; presenting data including scatter diagrams</p> <p>Threshold Concepts</p> <ul style="list-style-type: none"> • Scatter diagrams are used to show trends in a data set. <p>Link to Prior Learning Builds on knowledge of averages and data presentation</p> <p>Enquiry Question List 5 numbers which give a mean, mode, median and range of 10.</p>

<p style="text-align: center;">Year 11</p> <p>After year 10, students will spend the Autumn term completing the curriculum covering proof and graph work. The remainder of the year will then be spent revisiting topics that students can improve on. Students will have time to get exam-practice and improve their confidence in preparation for their GCSE exams.</p>	<p style="text-align: center;">Reasoning and proof</p> <p>Knowledge Content Vectors; geometric reasoning; bearings; congruence; construction and loci</p> <p>Threshold Concepts</p> <ul style="list-style-type: none"> • Vectors represent a translation and can be written in column vector form. <p>Link to Prior Learning Builds on knowledge of angles and constructions</p> <p>Enquiry Question Construct a 30 degree angle using a ruler and compass. What other angles can you construct?</p>	<p style="text-align: center;">Graphs</p> <p>Knowledge Content Linear inequalities; linear graphs, non-linear graphs</p> <p>Threshold Concepts</p> <ul style="list-style-type: none"> • The method for solving a linear inequality is almost identical to that of a linear equation. • Solid and dotted lines represent different things on an inequality graph <p>Link to Prior Learning Builds on knowledge of inequalities and graphs</p> <p>Enquiry Question $-3x > 12$ George says that you just need to divide both sides by -3 to solve the inequality. Is he correct? Show what you would do.</p>	<p style="text-align: center;">Revision</p>	<p style="text-align: center;">Revision</p>	<p style="text-align: center;">Revision</p>	<div style="background-color: yellow; width: 100%; height: 100%;"></div>
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