

# Curriculum Assessment Map: Year 10 Foundation Mathematics

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic	Calculating Space  Calculating  Solving Equations and Inequalities 1	Mathematical Movement 1  Algebra Simplifying  Proportional reasoning	Sequences  Solving Equations and Inequalities 2  Calculating Space 2	Conjecturing  Algebra Graphs	Fractions, Decimals and Percentages  Solving Equations and Inequalities 3  Probability	Presentation of data  Mathematical Movement 2  Visualising and Constructing
Key Learning & Skills	<ul style="list-style-type: none"> <li>Compare lengths, areas and volumes using ratio notation.</li> <li>Calculate perimeters of 2D shapes – including circles.</li> <li>Identify and apply circle definitions.</li> <li>Know and use the formulae for area and circumference of a circle.</li> <li>Calculate areas of composite shapes.</li> <li>Know and calculate volume of prisms - including cylinders/</li> <li>Calculate with roots and integer indices.</li> <li>Calculate with standard form.</li> <li>Use inequality notation to specify error intervals.</li> <li>Apply limits of accuracy.</li> <li>Solve linear equations with unknowns on both sides.</li> <li>Find solutions to linear equations using a graph.</li> </ul>	<ul style="list-style-type: none"> <li>Work with coordinates in all four quadrants</li> <li>Understand <math>y=x</math> and <math>y=-x</math>.</li> <li>Identify, describe and construct congruent shapes involving rotation, reflection and translation.</li> <li>Describe translations as vectors.</li> <li>Understand identities, equations and expressions.</li> <li>Expand two binomials.</li> <li>Factorise simple quadratic expressions.</li> <li>Create formulae to describe situations.</li> <li>Solve direct/inverse proportion problems graphically and algebraically.</li> <li>Apply congruence and similarity – including lengths in similar figures.</li> <li>Use compound units (density/pressure/area).</li> </ul>	<ul style="list-style-type: none"> <li>Recognise and use Fibonacci type sequences.</li> <li>Generate and find next terms of quadratic sequences.</li> <li>Use the concepts and vocabulary of inequalities.</li> <li>Solve linear inequalities with one variable and represent on a number line.</li> <li>Apply circle definitions including: tangent, arc, sector and segment.</li> <li>Calculate arc lengths, angles and areas of sectors.</li> <li>Calculate exactly with <math>\pi</math>.</li> <li>Apply Pythagoras's theorem.</li> </ul>	<ul style="list-style-type: none"> <li>Use basic congruence facts for triangles (SSS, SAS, ASA, RHS).</li> <li>Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to conjecture.</li> <li>Use known facts to obtain simple proof.</li> <li>Identify gradients and <math>t</math> <math>y</math>-intercepts.</li> <li>Use <math>y=mx+c</math> to identify parallel lines.</li> <li>Find the equation of a line given two points, or one point and the gradient.</li> <li>Interpret gradient as rate of change.</li> <li>Identify, sketch and interpret quadratic, cubic and reciprocal graphs.</li> <li>Plot and interpret graphs – including non-standard functions in real life context.</li> </ul>	<ul style="list-style-type: none"> <li>Interpret and percentages as operators.</li> <li>Work with percentages greater than 100%.</li> <li>Solve problems involving percentage change, reverse percentages and simple interest.</li> <li>Calculate exactly with fractions.</li> <li>Derive, solve and interpret <math>s</math> simultaneous equations algebraically.</li> <li>Find solutions to simultaneous equations using a graph.</li> <li>Calculate probability of independent and dependant events – including tree diagrams.</li> <li>Enumerate combinations of sets using a tree diagram.</li> <li>Use Venn diagrams to find probabilities.</li> </ul>	<ul style="list-style-type: none"> <li>Interpret and construct tables, charts and diagrams including: time series, bar charts, frequency polygons and stem and leaf diagrams.</li> <li>Draw lines of best fit and make predictions.</li> <li>Understand correlations doesn't indicate causation.</li> <li>Apply addition, subtractions and multiplication of column vectors.</li> <li>Construct; perpendicular bisector of a line, perpendicular to a given line/at a given point and bisecting an angle.</li> <li>Use the above constructions to solve loci problems.</li> <li>Construct plans and elevations of 3D shapes.</li> </ul>

# Curriculum Assessment Map: Year 10 Foundation Mathematics

<b>End points</b>	<p>Know how to interpret the display on a scientific calculator when working with standard form</p> <p>Know the difference between direct and inverse proportion</p> <p>Know how to represent an inequality on a number line</p> <p>Know that the point of intersection of two lines represents the solution to the corresponding simultaneous equations</p> <p>Know the meaning of a quadratic sequence</p> <p>Know the characteristic shape of the graph of a cubic function</p> <p>Know the characteristic shape of the graph of a reciprocal function</p> <p>Know the definition of speed</p> <p>Know the definition of density</p> <p>Know the definition of pressure</p> <p>Know Pythagoras' theorem</p> <p>Know the definitions of arc, sector, tangent and segment</p> <p>Know the conditions for congruent triangles</p>					
<b>Informal (formative) Assessment</b>	<ul style="list-style-type: none"> <li>• Sparx homework tasks             <ul style="list-style-type: none"> <li>• Exit tickets</li> <li>• GRIT</li> </ul> </li> </ul>					
<b>Formal (summative) Assessment</b>	Year 10 Test 1	Year 10 Test 2	Year 10 Test 3	Year 10 Test 4	Year10 Test 5	Year 10 Test 6

# Curriculum Assessment Map: Year 10 Higher Mathematics

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic	Investigating Properties of Shape  Calculating  Solving Equations and Inequalities 1	Mathematical Movement 1  Algebraic Proficiency: Manipulation  Proportional reasoning	Sequences  Solving Equations and Inequalities 2  Calculating Space	Conjecturing  Algebra graphs	Fractions, Decimals and Percentages  Solving Equations and Inequalities 3  Probability	Analysing Statistics  Algebraic Proficiency: Visualising 2  Mathematical Movement 2
Key Learning & Skills	<ul style="list-style-type: none"> <li>Estimate and calculate with powers and roots.</li> <li>Calculate with surds.</li> <li>Limits of accuracy (upper and lower bounds).</li> <li>Find approximate solutions using iteration.</li> <li>Solve simultaneous equations</li> </ul>	<ul style="list-style-type: none"> <li>Identify, describe and construct similar shapes – including scale factor.</li> <li>Describe combinations of rotations, reflections and translations.</li> <li>Simplify algebraic expressions involving algebraic fractions.</li> <li>Expand and simplify products of more than two binomials – including surds.</li> <li>Factorise quadratic expressions including difference of two squares.</li> <li>Interpret direct and inverse proportion equations.</li> <li>Recognise graphs that illustrate direct and inverse proportion.</li> <li>Understand <math>X</math> is inversely proportional to <math>Y</math> is equivalent to <math>X</math> is proportional to <math>1/Y</math>.</li> </ul>	<ul style="list-style-type: none"> <li>Find the <math>n</math>th term of quadratic sequences.</li> <li>Recognise and use simple geometric progression.</li> <li>Solve linear inequalities with two variables.</li> <li>Represent the solution set to an inequality using set notation and on a graph.</li> <li>Calculate surface area and volume of spheres, pyramids, cones and composite solids.</li> <li>Apply concepts of congruence and similarity to length, area and volumes of similar figures.</li> </ul>	<ul style="list-style-type: none"> <li>Learn, apply and prove the standard circle theorems.</li> <li>Plot and interpret graphs involving distance, speed and acceleration.</li> <li>Calculate and estimate gradients and areas under graphs (including non-linear graphs).</li> <li>Interpret results from distance-time graphs, velocity-time graphs and financial context graphs.</li> <li>Interpret the gradient at a point on a curve as instantaneous rate of change.</li> <li>Identify roots, intercepts and turning points of quadratic graphs.</li> </ul>	<ul style="list-style-type: none"> <li>Change recurring decimals to fractions and vice versa.</li> <li>Set up, solve and interpret growth and decay problems – including compound interest.</li> <li>Solve quadratic equations by factorising – including those that require rearrangement.</li> <li>Find approximate solutions to quadratics by using a graph.</li> <li>Deduce roots of quadratic functions algebraically.</li> <li>Apply systematic listing strategies – including the product rule.</li> <li>Calculate and interpret conditional probabilities using two-way tables, tree diagrams and Venn diagrams.</li> </ul>	<ul style="list-style-type: none"> <li>Construct and interpret diagrams for grouped discrete data.</li> <li>Interpret, analyse and compare distributions of data sets through: graphical representations and appropriate central tendency.</li> <li>Use <math>y=mx+c</math> to identify perpendicular lines.</li> <li>Recognise and use the equation of a circle</li> <li>Find the equation of the tangent to a circle at a given point.</li> <li>Add, subtract and multiply vectors.</li> <li>Apply diagrammatic and column representations of vectors.</li> </ul>

# Curriculum Assessment Map: Year 10 Higher Mathematics



<p><b>End points</b></p>	<ul style="list-style-type: none"> <li>• Know the convention for labelling the sides in a right-angle triangle.</li> <li>• Know the trigonometric ratios, <math>\sin\theta = \text{opposite/hypotenuse}</math>, <math>\cos\theta = \text{adjacent/hypotenuse}</math>, <math>\tan\theta = \text{opposite/adjacent}</math>.</li> <li>• Know exact values of <math>\sin\theta</math> and <math>\cos\theta</math> for <math>\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ</math> and <math>90^\circ</math>.</li> <li>• Know the exact value of <math>\tan\theta</math> for <math>\theta = 0^\circ, 30^\circ, 45^\circ</math> and <math>60^\circ</math>.</li> <li>• Know that <math>a^{1/n} = \sqrt[n]{a}</math>.</li> <li>• Know that <math>a^{-n} = 1/a^n</math>.</li> <li>• Know the information required to describe a transformation.</li> <li>• Know the special case of the difference of two squares.</li> <li>• Know how to set up an equation involving direct or inverse proportion.</li> <li>• Know set notation.</li> <li>• Know the conventions for representing inequalities graphically.</li> <li>• Know the formulae for the volume of a sphere, a cone and a pyramid.</li> <li>• Know the formulae for the surface area of a sphere, and the curved surface area of a cone.</li> <li>• Know the circle theorems.</li> <li>• Know the characteristic shape of the graph of an exponential function.</li> <li>• Know the meaning of roots, intercepts and turning points.</li> <li>• Know the definition of acceleration.</li> <li>• Know how to construct a box plot.</li> <li>• Know the conditions for perpendicular lines.</li> </ul>					
<p><b>Informal (formative) Assessment</b></p>	<ul style="list-style-type: none"> <li>• Sparx homework tasks             <ul style="list-style-type: none"> <li>• Exit tickets</li> <li>• GRIT</li> </ul> </li> </ul>					
<p><b>Formal (summative) Assessment</b></p>	<p>Year 10 Test 1</p>	<p>Year 10 Test 2</p>	<p>Year 10 Test 3</p>	<p>Year 10 Test 4</p>	<p>Year10 Test 5</p>	<p>Year 10 Test 6</p>