

**Elements Curriculum Plan**  
**Subject: Mathematics (GCSE Foundation Curriculum)**

**Building Block 6a ≈ KS4 (Y10)**

<b>Building Block 6a ≈ KS4 (Y10)</b>			
<b>Half-Term</b>	<b>Topic/Content</b>	<b>Skills</b>	<b>Personal Development</b>
Autumn 1	Non calculator methods	<ul style="list-style-type: none"> <li>• Revisit types of number- extend to include rational and irrational</li> <li>• Revisit Arithmetic</li> <li>• Revisit Fraction arithmetic</li> <li>• Evaluate calculations involving percentages</li> <li>• Work with exact answers in area and volume</li> </ul>	
	Types of number and sequences	<ul style="list-style-type: none"> <li>• Use factors multiples primes and prime factorisation</li> <li>• Recognise arithmetic and geometric sequences</li> <li>• Recognise and use other sequences</li> </ul>	
	Indices and roots	<ul style="list-style-type: none"> <li>• Work out powers and roots</li> <li>• Use the rule of indices</li> <li>• Calculate with numbers and standard form</li> </ul>	
<b>Assessment</b>			
Autumn 2	Ratio and fractions	<ul style="list-style-type: none"> <li>• Use ratios including with mixed units</li> <li>• Fractions in ratios</li> <li>• Fractions from ratios</li> <li>• Combining ratios</li> <li>• Unit pricing (best buys)</li> <li>• Currency Conversions</li> </ul>	
	Percentages and Interest	<ul style="list-style-type: none"> <li>• Convert Fractions Decimals and percentages</li> <li>• Find percentages and percentage changes</li> <li>• Find one number as a percentage of another</li> <li>• Calculate simple and compound interest</li> <li>• Evaluate exponential change</li> <li>• Find original values</li> </ul>	
	Geometry Circles	<ul style="list-style-type: none"> <li>• Name parts of a circle and perform related calculations</li> <li>• Review area and circumference</li> </ul>	

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		<ul style="list-style-type: none"> <li>• Find areas and volumes related to circles, cylinder, cone sphere, etc.. and parts thereof for higher pupils.</li> </ul>	
Assessment			
Spring 1	Angles and bearings	<ul style="list-style-type: none"> <li>• Review BB3-5 angles</li> <li>• Understand and use bearings</li> <li>•</li> </ul>	
	Congruence similarity and enlargement	<ul style="list-style-type: none"> <li>• Understand the difference between congruency and similarity</li> <li>• Review Transformations from BB3-BB5</li> <li>• Enlarge a shape about a given point</li> <li>• Find missing sides in similar shapes including similar triangles</li> <li>• Understand and use the conditions for a pair of congruent triangles</li> </ul>	
	Trigonometry	<ul style="list-style-type: none"> <li>• Understand trigonometric ratios</li> <li>• Work out missing lengths and angles in right angled triangles</li> <li>• Know and use the exact trig values</li> </ul>	
Assessment			
Spring 2	Algebra- representing solutions of equations and inequalities	<ul style="list-style-type: none"> <li>• Recap terminology and equations from BB3- BB5</li> <li>• Form and solve equations and inequalities in a variety of contexts including with unknowns on both sides.</li> <li>• Represent solutions to inequalities on a number line</li> <li>• Represent solutions to equations graphically</li> </ul>	
	Simultaneous equations	<ul style="list-style-type: none"> <li>• Understand what a simultaneous equations is</li> <li>• Solve simultaneous equation in puzzle form</li> <li>• Understand the meaning of solution, appreciating that some equations have more than one solution</li> <li>• Form and solve pair of simultaneous equations graphically</li> </ul>	

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		<ul style="list-style-type: none"> <li>• Form and solve a pair of simultaneous equations algebraically</li> </ul>	
Assessment			
Summer 1	Vectors	<ul style="list-style-type: none"> <li>• Understand vector notation</li> <li>• Vector arithmetic- addition, subtraction, and multiplication by a scalar</li> <li>• Vectors and translations</li> </ul>	
	Delving into Data- The data handling cycle	<ul style="list-style-type: none"> <li>• Understand sampling including possible limitations</li> <li>• Construct and interpret tables and line graphs for time series</li> <li>• Understand and represent grouped data</li> <li>• Understand and identify correlation</li> <li>• Use lines of best fit, understand the problems of extrapolation</li> <li>• Construct and interpret frequency polygons</li> <li>• Evaluate measure of location and dispersion</li> <li>• Use statistical diagrams</li> <li>• and measures to compare distributions</li> </ul>	
Assessment			
Summer 2	Review and revision project	Review and revise areas from throughout the year apply skills of investigation and A02 and A03 through investigation and problem solving opportunities	
Assessment			

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#### Building Block 6b ≈ KS4 (Y11) FOUNDATION

Half-Term	Topic/Content	Skills	Personal Development
Autumn 1	1. Fractions	<ul style="list-style-type: none"> <li>• Add and subtract between fractions</li> <li>• Convert between fractions and mixed numbers</li> <li>• Add and subtract mixed numbers</li> <li>• Multiply fractions with mixed numbers</li> <li>• Divide fractions with mixed numbers</li> <li>• Order fractions with different denominations</li> </ul>	
	2. Powers and Indices	<ul style="list-style-type: none"> <li>• Write integers as a product of their prime factors</li> <li>• Find the HCF of a pair of integers</li> <li>• Find the LCM of a pair of integers</li> <li>• Use and apply laws of indices</li> <li>• Convert between normal numbers and standard form</li> </ul>	
	3. Ratio and proportion	<ul style="list-style-type: none"> <li>• Share amounts into a given ratio</li> <li>• Use proportion to solve problems</li> <li>• Use proportion for recipe problems</li> <li>• Calculate best value</li> <li>• Calculate side lengths of similar shapes</li> <li>• Use exchange rates to solve problems</li> <li>• Use compound measures, Speed distance time, density and pressure</li> <li>•</li> </ul>	
	4. Percentages	<ul style="list-style-type: none"> <li>• Calculate percentages of an amount</li> <li>• Calculate an increase or decrease by a given percentage</li> <li>• Calculate percentage change</li> <li>• Calculate original value problems (reverse percentages)</li> <li>• Calculate compound interest/ depreciation</li> </ul>	
Assessment			

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Autumn 2	5. Linear Equations	<ul style="list-style-type: none"> <li>• Solve linear equations including multiples (2 step and brackets)</li> <li>• Solve linear equation involving quotients</li> <li>• Form and solve linear equations</li> <li>• Change the subject of linear equations</li> </ul>	
	6. Quadratic equations	<ul style="list-style-type: none"> <li>• Expand and simplify double brackets to form quadratic expressions</li> <li>• Factorise quadratic expressions</li> <li>• Solve quadratic expressions with an x coefficient equal to 1</li> </ul>	
	7. Sequences and graphs	<ul style="list-style-type: none"> <li>• Generate terms of linear/quadratic sequences</li> <li>• Calculate the nth term of a linear sequence</li> <li>• Check if a term is part of a given sequence</li> <li>• Plot linear graphs given in the form <math>y=mx+c</math></li> <li>• Plot non standard linear graphs</li> <li>• Calculate the gradient of a linear graph</li> <li>• Rearrange the equation of graph into the form <math>y=mx+C</math></li> <li>• Plot quadratic graphs</li> <li>• Plot cubic graphs</li> </ul>	
	8. Algebraic manipulation including simultaneous equations	<ul style="list-style-type: none"> <li>• Change the subject of simple equations and formulae</li> <li>• Change the subject of equations where the variable appears on both sides of the equation</li> <li>• Solve simultaneous equations graphically</li> <li>• Solve simultaneous equations algebraically by elimination (and where a common multiple must be identified)</li> <li>• Solve simultaneous equations algebraically by substitution</li> </ul>	
Assessment			

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Spring 1	9. Data handling	<ul style="list-style-type: none"> <li>• Plot and interpret bar charts</li> <li>• Plot and interpret pictograms</li> <li>• Construct and interpret frequency polygons</li> <li>• Calculate averages from frequency tables</li> <li>• Construct and interpret pie charts</li> <li>• Construct and interpret scatter graphs</li> <li>• Construct and interpret time series graphs and moving averages</li> </ul>	
	10. Probability	<ul style="list-style-type: none"> <li>• Construct and interpret frequency trees</li> <li>• Construct simple tree diagrams</li> <li>• Calculate probabilities from tree diagrams</li> <li>• Construct Venn diagrams</li> <li>• Calculate probabilities from Venn diagrams</li> <li>• Construct and interpret two way diagrams</li> <li>• Construct and interpret sample space diagrams</li> <li>• Calculate relative frequency</li> </ul>	
	11. Pythagoras	<ul style="list-style-type: none"> <li>• Understand the relationship between the sum of area of the squares constructed on the side of a right angled triangle</li> <li>• Use Pythagoras theorem to calculate the length of the hypotenuse</li> <li>• Use Pythagoras theorem to calculate the length of the shorter sides.</li> </ul>	
Assessment			
Spring 2	12. Angles	<ul style="list-style-type: none"> <li>• Use angle facts to calculate missing angles</li> <li>• Calculate missing angles in special triangles (equilateral, right angled isosceles)</li> <li>• Identify corresponding angles</li> <li>• Identify alternate angles</li> <li>• Use angle facts to find missing angles in parallel lines</li> <li>• Calculate interior and exterior angles</li> </ul>	

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		<ul style="list-style-type: none"> <li>• Calculate the number of sides in a regular polygon has given the interior/exterior angle</li> <li>• Construct and interpret sample space diagrams</li> <li>• Calculate relative frequency</li> </ul>	
	13. Trigonometry	<ul style="list-style-type: none"> <li>• Correctly label sides of a right angled triangle (hypotenuse, opposite, adjacent)</li> <li>• Identify the correct trigonometric ratio (Using SOHCAHTOA)</li> <li>• Calculate missing sides and lengths with and without rearranging</li> <li>• Calculate missing angles using sine, cosine or tangent</li> <li>• Recognise sine cosine and tangent graphs</li> </ul>	
Assessment			
Summer 1	14. Revision	<ul style="list-style-type: none"> <li>• Additional content to be identified by monitoring and using the mocks and other assessment materials to help identify need.</li> </ul>	
Assessment			
Summer 2	15. Final exams		
Assessment			

#### Building Block 6b ≈ KS4 (Y11) HIGHER

Half-Term	Topic/Content	Skills	Personal Development
Autumn 1			

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Assessment			
Autumn 2			
Assessment			
Spring 1			
Assessment			
Spring 2			
Assessment			
Summer 1			
Assessment			
Summer 2			
Assessment			

**Rationale –**



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**BB6ab**

As above, plus:

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