

GCSE Mathematics Higher Programme of Study (New)

HIGHER-A & S GROUPS	FOUNDATION-P/I/R/E GROUPS				
IN YEAR 10, STUDENTS AT THE TOP END OF THE BAND COVER GREEN, YELLOW AND SOME RED CONTENT. AT THE LOWER END OF THE BAND STUDENTS MAY ONLY COVER GREEN CONTENT. IN YEAR 11, STUDENTS AT THE TOP END REVISE YELLOW CONTENT AND STUDY RED CONTENT IN DEPTH. AT THE LOWER END OF THE BAND, STUDENTS WILL REVISE GREEN CONTENT AND STUDY SOME YELLOW CONTENT IN DEPTH	Old Grade	Numbered grade	GCSE Ref	Notes	ASSESSMENT IN ADDITION TO UNIT GROW ASSESSMENTS, GCSE PAST PAPERS ARE USED FOR DATA CAPTURES THROUGHOUT THE YEAR
<b>HALF-TERM 1:Section 1: Geometry</b>					
2D and 3D shapes	D	4	<a href="#">G12, G1</a>	include conventional terms and notation	
Quadrilaterals	D	4	<a href="#">G4</a>		
Symmetry of 2D shapes	D	4	<a href="#">G1 (part)</a>		
Area and perimeter of 2D shapes	D	4	<a href="#">G14, G16 (part), G17</a>	include compound shapes	
Properties of circles	D	4	<a href="#">G9</a>		
Area and Circumference of a circle	C	5	<a href="#">G17 (part)</a>	include compound shapes	
Volume of a prism	D/C	5	<a href="#">G16</a>		
Surface area of a prism	C/B	6	<a href="#">G17</a>		
Isometric Drawing, including plans and elevations	C	5	<a href="#">G13</a>		
Loci and Construction	C/B	6	<a href="#">G2</a>		
Bearings, Scale Drawings and Maps	C/B	6	<a href="#">G15</a> <a href="#">R2</a>		
Harder Volumes	A/A*	8	<a href="#">G16, G17 (part)</a>		
Congruency and Similarity	A/A*	8	<a href="#">G13, G5</a>		
Area of a sector and arc length	A/A*	8	<a href="#">G13</a>		UNIT GROW ASSESSMENT
<b>HALF-TERM 1:Section 2: Number</b>					
Order positive and negative integers, decimals and fractions, use symbols	C/D	5	<a href="#">N1</a>		
Apply the four operations, using formal written methods, to both integers and decimals		5	<a href="#">N2 (part)</a>		
Apply systematics listing strategies		4	<a href="#">N4</a>		
Prime Factors, LCM, HCF, prime factorisation	C/D	5	<a href="#">N4</a>		
Squares, cubes and index notation	C/D	5	<a href="#">N6</a>		
BIDMAS	D	4	<a href="#">N2 (part)</a>		
Converting between FDP	D	4	<a href="#">N10 (first part)</a>		
Rounding and Estimation	C/D	5	<a href="#">N14, N15 (first part)</a>		
Indices, including fraction and negative powers	B	6	<a href="#">N7</a>		
Standard Form including the 4 operations	B	6	<a href="#">N9</a>		
Surds - simplifying a nd rationalising the denominator and working with multiples of $\pi$	A	7	<a href="#">N8</a>		
Recurring decimals to fractions (and vice versa)	A/A*	8	<a href="#">N10 (first part)</a>		
Upper and Lower Bounds (Use inequality notation to specify error intervals due to rounding)	A/A*	8	<a href="#">N15 (first part), N16</a>		UNIT GROW ASSESSMENT

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<b>HALF-TERM 2:Section 3: Algebra</b>					
Basic Algebra	D	4	<a href="#">A1</a>		
Collecting Like Terms	D/C	5	<a href="#">A4 (part)</a>		
Substitution	D/C	5	<a href="#">A2</a>		
Expanding a single bracket	D	4	<a href="#">A4 (part)</a>		
Coordinates in all four quadrants		4	<a href="#">A8</a>	<a href="#">Solve geometrical problems on coordinate axes G11</a>	
Drawing Graphs, including quadratic	D-B	4 to 6	<a href="#">A12 (part)</a>		
$y=mx + c$ , parallel and perpendicular lines (the equation of a line through two points or through one point with given gradient)	B	6	<a href="#">A9, A10</a>		
Cubic, reciprocal and exponential graphs	A	7	<a href="#">A12 (part)</a>		
Recognise equation of a circle with centre at the origin; find the equation of a tangent to a circle at a given point		8	<a href="#">A16</a>		
Interpret areas under graphs and gradients of graphs in real-life contexts		7	<a href="#">A15</a>		UNIT GROW ASSESSMENT
<b>HALF-TERM 2:Section 4: Algebra - Sequences</b>					
Recognise and use a square, triangular and Fibonacci sequences		4	<a href="#">A24 (part)</a>		
Recognise and use nth term including quadratic sequences		4	<a href="#">A24 (part)</a>		
Find the nth term of a linear sequence		5	<a href="#">A25 (first part)</a>		
nth term of a quadratic		6	<a href="#">A25 (last part)</a>		
Recognising geometric sequences where ratio is not a surd		6	<a href="#">A24 (last part)</a>		
Recognising geometric sequences where ratio is a surd		7	<a href="#">A24 (last part)</a>		
Using general iterative processes		8	<a href="#">A13</a>	Generating from term to term or position to term - wrong place?	UNIT GROW ASSESSMENT
<b>HALF-TERM 2:Section 5: Statistics</b>					
Using averages and range (consider outliers when calculating range)	C/D	5	<a href="#">S4</a>		
When to use each type of average	C	5	<a href="#">S5</a>		
Averages and Range from a frequency table	C	5	<a href="#">S4</a>		
Quartiles and Interquartile Range	B	6	<a href="#">S4</a>		
Collecting and Recording Data	D	4	<a href="#">S2 (part)</a>		
Sampling (including the limitations of sampling)	C/B	5	<a href="#">S1</a>		
Two way tables	C	5	<a href="#">S2 (part)</a>		UNIT GROW ASSESSMENT

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**HALF-TERM 3: Section 6: Algebra**

Language of algebra- equations, identities, expressions, formulae		4	<a href="#">A3, A6, A7</a>		
Expanding double brackets	D	4	<a href="#">A4 (part)</a>		
Factorising	B-D	4 to 6	<a href="#">A4 (part)</a>		
Solving Equations (understand the $\neq$ symbol (not equal))	B-D	4 to 6	<a href="#">A17 (part)</a>	include finding approximate solutions from a graph	
Solving Inequalities	C-B	5	<a href="#">A22 (part)</a>		
Generating and Using Formulae	C/D	5	<a href="#">A21</a> <a href="#">A5</a>		
Fraction and Negative Powers with Algebra	A	7	<a href="#">A4 (part)</a>		
Rearranging Formulae	C/B	5	<a href="#">A5</a>		
Simultaneous Equations	B	6	<a href="#">A19 (part)</a>	include deriving formulae	
Factorising and Solving Quadratics	B	6	<a href="#">A18 (part), A4</a>	include finding approximate solutions from a graph	
Factorising and Solving Quadratics eg $3x^2+...$	A	7	<a href="#">A18 (part)</a>		
Complete the square (Locate turning point of quadratic functions by completing the square)	A/A*	8	<a href="#">A11</a> <a href="#">A11 (part)</a>		
Quadratic Formula	A/A*	8	<a href="#">A11 (part)</a>		
Graphical Inequalities	B	6	<a href="#">A22 (part)</a>	include set notation	
Simultaneous Equations with curves and circles	A/A*	8	<a href="#">A19 (part)</a>		
Solving Simultaneous Equations graphically	A/B	6	<a href="#">A19 (part)</a>		
Solving Quadratic Inequalities		7	<a href="#">A22 (part)</a>	and linear inequalities in two variables	UNIT GROW ASSESSMENT

**HALF-TERM 3: Section 7: Number**

Express one quantity as fraction of another		3	<a href="#">R6</a>		
Finding a fraction of an amount	D	4	<a href="#">N2 (part)</a>		
Addition and Subtraction of Fractions	C	5	<a href="#">N2 (part)</a>		
Multiplication and Division of Fractions	C	5	<a href="#">N2 (part)</a>		
Mixed Numbers	B	6	<a href="#">N2 (part)</a>		
Algebraic Fractions	A/A*	8	<a href="#">A8 (part)</a>		
Proof	A*	8	<a href="#">R6</a> <a href="#">A8 (part)</a>		UNIT GROW ASSESSMENT

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<b>HALF-TERM 4:Section 8: Number (and Ratio)</b>					
Working out the percentage of a quantity (calc & non-calc)	C	5	<a href="#">R9 (part)</a>	include all of this section except reverse percentages	
Percentage Increase and Decrease	C/B	5	<a href="#">R9 (part)</a>		
Compound interest	B	6	<a href="#">R16 (part)</a>		
Reverse percentages	B	6	<a href="#">R9 (part)</a>		
Set up, solve and interpret growth and decay problems		6	<a href="#">R16 (part)</a>	work with general iterative processes	UNIT GROW ASSESSMENT
<b>HALF-TERM 4: Section 9: Statistics</b>					
Pie Charts	D	3	<a href="#">S2 (part)</a>		
Bar Charts	D	4	<a href="#">S2 (part)</a>		
Pictograms		3	<a href="#">S2 (part)</a>		
Vertical Line charts		3	<a href="#">S2 (part)</a>		
Scatter graphs & Correlation (know that correlation does not imply causality)	C	4	<a href="#">S6</a>		
Comparing Data	B	5	<a href="#">S5</a>		
Time Series tables and graphs		6	<a href="#">S2 (part)</a>		
Cumulative Frequency & Box Plots (& comparing)	B	6	<a href="#">S3</a>		
Histograms	A	7	<a href="#">S3</a>		UNIT GROW ASSESSMENT
<b>HALF-TERM 4:Section 10: Geometry</b>					
Angles in triangles and quadrilaterals (Use the standard convention for labelling sides and angles of polygons)	D	4	<a href="#">G1, G3 (part)</a>		
Derive angles in a triangle		4	<a href="#">G3 (part)</a>		
Angles in Polygons (Use the standard convention for labelling sides and angles of polygons)	C	5	<a href="#">G1, G3 (part)</a>		
Angles on parallel lines	C	5	<a href="#">G3 (part)</a>		
Circle Theorems (prove the circle theorems)	B	6	<a href="#">G10</a>		UNIT GROW ASSESSMENT

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<b>HALF-TERM 5:Section 11: Ratio</b>					
Writing and Simplifying Ratios	D	4	<a href="#">R4, R12</a>	include comparing lengths, areas and volumes using ratio notation	
Ratio Problems (ratio as a linear function)	C	5	<a href="#">R8</a>	include identify and work with fractions in ratio problems (N11)	
Dividing in a given ratio	C	5	<a href="#">R5</a>		
Proportion (eg recipes)	C	5	<a href="#">R5, R7</a>		
Direct and Inverse Proportion	B	6	<a href="#">R10, 13, 14</a>	include interpreting gradient as rate of change and interpreting proportion graphs	
interpret the gradient at a point on a curve as the instantaneous rate of change		8	<a href="#">R15</a>		UNIT GROW ASSESSMENT
<b>HALF-TERM 5:Section 12: Geometry</b>					
Pythagoras	C	5	<a href="#">G20 (part)</a>		
Trigonometry missing side and angle (know the exact values of sin, cos and tan 0, 30, 45, 60 and 90 degrees)	B	6	<a href="#">G20 (part), G21</a>		
3D Pythagoras and Trigonometry	A	7	<a href="#">G20 (part)</a>		
Sine Rule, Cosine Rule and $\frac{1}{2}ab\sin C$	A*	8	<a href="#">G13</a>		UNIT GROW ASSESSMENT
<b>HALF-TERM 5:Section 13: Probability</b>					
Probability experiments, frequency trees outcomes of multiple future experiments		5	<a href="#">P1, P2</a>		
Calculating simple probabilities, including mutually exclusive (Use Venn diagrams)	C/D	5	<a href="#">P4, P6 (part)</a>	include probability spaces	
Listing outcomes	C/D	5	<a href="#">P6 (part), P7</a>		
Estimating probability	C	5	<a href="#">P3, P5</a>		
Tree Diagrams	B	6	<a href="#">P6 (part), P8</a>		
Conditonal probability	A	7	<a href="#">P9</a>		UNIT GROW ASSESSMENT

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<b>HALF-TERM 6:Section 14: Geometry</b>						
Reflection	C/D	5	G7			
Rotation	C	5				
Translation	C	5				
Enlargement	C/B	5				
Describing Transformations	C/B	5			include G8 as well	
Sketch $y = \sin x, \cos x, \tan x$		7	A12 (part)			
Transformations of $f(x)$	A*	8	A13, G24 leads onto next part			UNIT GROW ASSESSMENT
<b>HALF-TERM 6:Section 15: Geometry</b>						
Vectors and vector notation	A*	8	G24			
Magnitude of a vector and addition of vectors	A*	8	G25			
Parallel Vectors and solving geometric problems	A*	8	G26			UNIT GROW ASSESSMENT
<b>HALF-TERM 6:Section 16: Ratio -Compound Measures</b>						
Use standard units		3	N13 G14			
Speed		4	R1 (part), R11 (part)			
Conversion between metric units (cm <sup>3</sup> to l)		4				
Density		5	R1 (part), R11 (part)			
Rates of pay and pressure		6	R1 (part), R11 (part)			
Real Life Graphs including reciprocal, exponential and suvat		7	A14			UNIT GROW ASSESSMENT