GCSE Mathematics Foundation Programme of Study (New)

HIGHER SCHEME - A & S GROUPS FOUNDATION - P/I/R/E GROUPS IN YEAR 9, STUDENT AT THE TOP END OF THE BAND COVER GREEN AND SOME YELLOW CONTENT. AT THE LOWER END OF THE BAND STUDENTS MAY ONLY COVER SOME OF THE GREEN CONTENT.	Old Grade	Numbered grade	GCSE Ref	Timings
Section 1: Shape				
Properties of Triangles	G	1	G4	4 weeks
Properties of Quadrilaterals	F	2		
Identifying Congruent and Similar Shapes	E	3	G5 (part)	
Properties of Circles	G	1	G9	
Drawing circles	G	1		
Line Symmetry	F	2	G1 (part of)	
Rotational Symmetry	F	2	G1 (part of)	
Recognising 3D Shapes	F	2	G12	
Isometric Drawing	E	3	G13 (part of)	
Loci and Construction	C	5	G2	5 weeks
Bearings, Scale Drawing and Maps	D	4	G15	
	D	4	R2	
Nets, Plans and Elevations	C	5	G13 (part of)	
Congruence and finding corresponding lengths in similar shapes		5	G19	
Identify congruent triangles		5	G5	
Section 2: Number				
Place value and writing numbers	G	1	N2 (part)	4 weeks
Addition, Subtraction, Multiplication and Division with integers	F	2	N2 (part)	
Apply Systematic Listing Strategies		4	N5	
Rounding	E	3	N15 (part)	
Negative Numbers	E	3	N2 (part)	
Ordering decimals	E	3	N1 (part)	
Add, Subtract, Multiply & Divide Decimals	E	3	N2 (part)	
BIDMAS		4	N3	
Factors, multiples and primes, LCM and HCF	D	4	N4	
Squares and Cubes, calculate with roots and integer indices	D	4	N2 (part), N7	
Rounding and Estimation (to any number of significant figures)	C	5	N14, N15 (part)	

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Upper and lower bounds		6	N15 (part), N16	
Manipulating Decimals	D	4	N2 (part)	
Using a calculator	D	4	S	
Section 3: Algebra				
Understand variables, terms, equations, identities & expressions (understand the ≠ symbol (not equal))	F	2	N1 (part)	3 weeks
			A3	
Collecting Like Terms	E	3	A4 (part)	
Basic algebra (using algebra notation)	E	3	A1	
Use of function machines		3	A7	
Substitution	C/D	4	A2	
Co-ordinates including solving geometrical problems	E	3	A8	3 weeks
			G11	
Simplify expressions including index laws		4	A4 (part)	
Drawing straight line graphs including identifying parallel lines from an equation	C	4	A9 (part)	
Use gradients and intercepts		4	A10	
Finding the equation of a line given two points or one points and a given gradient		**5**	A9 (part)	
Use direct and inverse proportion graphically and algebraically		6	R10	
Equations, Identities and proof		6	A6	
Real life graphs	D	4	A14	
Quadratic, Cubic & Reciprocal Graphs	B	6	A12	
Section 4: Sequences				
Generate terms of a sequence		3	A23	2 weeks
Recognise and use a square, triangular and Fibonacci sequences		4	A24 (part)	
Recognise and use nth term including quadratic sequences		4	A24 (part)	
Find the nth term of a linear sequence		5	A25	

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Recognising geometric seqences where ratio is not a surd		6	A24 (part)	1 week
Section 5: Handling Data				
Using averages and range (understand what an outlier is)	E	3	S4 (part)	2 weeks
When to use each type of average	E	3	S5	
Averages and Range from a frequency table	E	3	S4 (part)	
Collecting and Recording Data	E	3	S2 (part)	3 weeks
Sampling (including the difference between a population and a sample)	D	4	S1 (part)	
Limitations of sampling		4	S1 (part)	
Two way tables	C/D	5	S1 (part)	
Section 6: Algebra				
Expressions with powers	E	3	N6	3 weeks
Expanding brackets (including double brackets)	E	3	A4 (part)	
Writing numbers in standard form	E	3	N9 (part)	
Factorising	C	5	A4 (part)	3 weeks
Factorising quadratics where the coefficient of x^2 is 1	B	5	A4 (part)	
Solving Equations	D	4	A17	
Solving Inequalities	C	5	A22	
Solving Quadratics		6	A18	
Recognise the difference of two squares		6	A4 (part)	
Roots, Intercepts, turning points of quadratics		6	sequences	
Calculations using standard form		6	N9 (part)	
Deriving & solving simultaneous equations algebraically & graphically		6	A19, A21	
Using Formulae	C	5	A2	
Rearranging Formulae	C	5	A5	
Section 7: Number				
Equivalent Fractions	E	3	N1 (part)	

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Ordering Fractions	E	3	N1 (part)	2 weeks
Improper Fractions	E	3	N2 (part)	
Express one quantity as a fraction of another		3	R3	
Multiplication and Division of fractions	D	4	N2 (part)	
Addition and Subtraction of fractions	D	4	N2 (part)	3 weeks
Calculate exactly with fractions and multiples of π		4	N8	
Work interchangeably with terminating decimals and their corresponding fractions		4	N10	
Converting between FDP	D	4	N12	
Section 8: Number				
Working out the percentage of a quantity	E	3	R9	1 week
Working out the percentage of a quantity (using a calc)	D	4		
Percentage Increase and Decrease	C/D	5	R9	2 weeks
Writing one number as a percentage of another	C/D	5		
Calculating percentage change (profit & loss)		5		
Reverse Percentages		5		
Solve problems involving compound interest		6	R16	
Set up, solve and interpret growth and decay problems		6		
Section 9: Data Handling				
Pictograms	G	1	S2 (part)	3 weeks
Pie Charts	D	4	S2 (part)	
Bar Charts	E	3	S2 (part)	
Composite Bar charts	D	4	S2 (part)	
Frequency Diagrams	D	4	S2 (part)	2 weeks
Scatter graphs & Correlation (know that correlation does not imply causality)		4	S6	
Section 10: ShapE				
Naming angles	G	1	G14 (part)	

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Measuring angles	F	2	G14 (part)	3 weeks
Angles on straight lines and around a point	E	3	G3 (part)	
Angles in triangles and quadrilaterals	E	3	G3 (part)	
Derive angles in a triangle		4	G3 (part)	
Angles on parallel lines	D	4	G1 (part)	2 weeks
Angles in polygons (Use the standard convention for labelling sides and angles of polygons)	D	4	G1 (part)	
Tessellations (including angles at a point)	C/D	4	G1 (part)	
Section 11: Number				
Writing numbers in a ratio	F	2	R4 (part)	3 weeks
Simplifying ratio	E	3	R4 (part)	
Dividing in a given ratio	C/D	4	R5	
Identify and work with fractions in ratio problems		5	N11	
Proportion (eg recipes)	C	5	R7	
Express a multiplicative relationship between two quantities as a ratio or a fraction (equivalent ratios)		5	R6	
Ratio problems (ratio as a linear function)		5	R8	
Compare lengths, areas and volumes using ratio notation; make links to similarity and scale factors		5	R12	2 weeks
Direct and Inverse proportion equations including concept of inverse proportion		6	R13	
Interpret gradient as a rate of change and graphs that illustrate direct and inverse proportion		6	R14	
Section 12: Shape				
Pythagoras' Theorem	C	5	G6 (part) G20 (part)	
Trigonometry	B	6	G20 (part)	
Know the exact values of sin, cos and tan of key angles (0, 30, 45, 60, 90)		6	G21	

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Section 13: Data Handling				
Calculating simple probabilities	E	3	P1	2 weeks
Apply ideas of randomness, fairness and equally likely events to calculate expected outcomes of multiple future experiments [S]		4	P2	
Mutually exclusive events	D	4	P4	
Listing outcomes	D	4	P7	
Estimating probability	D	4	P3, P5	
Tree Diagrams		6	P8	
Venn Diagrams		6	P6	
Section 14: Shape				
Perimeter & Area including compound shapes	E	3	G14 (part), G16 (part)	3 weeks
Reading Scales	E	3	N13	
Speed and Density calculations (including calculating pressure)	E	3	R1, R11	
Volume and surface area of prisms	B/C	6	G16 (part)	
Circumference and Area of a circle (using multiples of π)	C/D	4	G17	
Arc length and area of a sector		6	G18	
Transformations (including fractional scale factors)	C	5	G7	
Describe translations as 2D vectors		5	G24	
Vectors		6	G25	

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