

**FULL SPEC - A list of every single LO in the F and H IGCSE (no repeated LOs)**

Tier	#	Unit Title	#	Spec	Code	Learning Objective
F	10	Algebraic manipulation	A	55 F	2.1A	F2.1A understand that symbols may be used to represent numbers in equations or variables in expressions and formulae
F	10	Algebraic manipulation	A	56 F	2.1B	F2.1B understand that algebraic expressions follow the generalised rules of arithmetic
F	10	Algebraic manipulation	A	57 F	2.1C	F2.1C use index notation for positive and negative integer powers (including zero)
F	10	Algebraic manipulation	A	58 F	2.1D	F2.1D use index laws in simple cases
F	10	Algebraic manipulation	A	59 F	2.2B	F2.2B collect like terms
F	10	Algebraic manipulation	A	60 F	2.2C	F2.2C multiply a single term over a bracket
F	10	Algebraic manipulation	A	61 F	2.2D	F2.2D take out common factors
H	9	Algebraic manipulation	A	178 H	2.1A	H2.1A use index notation involving fractional, negative and zero powers
H	9	Algebraic manipulation	A	179 H	2.2A	H2.2A expand the product of two or more linear expressions
H	9	Algebraic manipulation	A	180 H	2.2B	H2.2B understand the concept of a quadratic expression and be able to factorise such expressions
H	9	Algebraic manipulation	A	181 H	2.2C	H2.2C manipulate algebraic fractions where the numerator and/or the denominator can be numeric, linear or quadratic
H	9	Algebraic manipulation	A	182 H	2.2D	H2.2D complete the square for a given quadratic expression
H	9	Algebraic manipulation	A	183 H	2.2E	H2.2E use algebra to support and construct proofs
H	19	Calculus	A	208 H	3.4A	H3.4A understand the concept of a variable rate of change
H	19	Calculus	A	209 H	3.4B	H3.4B differentiate integer powers of x
H	19	Calculus	A	210 H	3.4C	H3.4C determine gradients, rates of change, stationary points, turning points (maxima and minima) by differentiation and relate these to graphs
H	19	Calculus	A	211 H	3.4D	H3.4D distinguish between maxima and minima by considering the general shape of the graph only
H	19	Calculus	A	212 H	3.4E	H3.4E apply calculus to linear kinematics and to other simple practical problems
H	10	Expressions, formulae and rearranging formulae	A	184 H	2.3A	H2.3A understand the process of manipulating formulae or equations to change the subject, to include cases where the subject may appear twice or a power of the subject occurs
H	10	Expressions, formulae and rearranging formulae	A	185 H	2.5A	H2.5A set up problems involving direct or inverse proportion and relate algebraic solutions to graphical representation of the equations
F	11	Expressions, formulae and rearranging formulae	A	62 F	2.2A	F2.2A evaluate expressions by substituting numerical values for letters
F	11	Expressions, formulae and rearranging formulae	A	63 F	2.3A	F2.3A understand that a letter may represent an unknown number or a variable
F	11	Expressions, formulae and rearranging formulae	A	64 F	2.3B	F2.3B use correct notational conventions for algebraic expressions and formulae
F	11	Expressions, formulae and rearranging formulae	A	65 F	2.3C	F2.3C substitute positive and negative integers, decimals and fractions for words and letters in expressions and formulae
F	11	Expressions, formulae and rearranging formulae	A	66 F	2.3D	F2.3D use formulae from mathematics and other real-life contexts expressed initially in words or diagrammatic form and convert to letters and symbols
F	11	Expressions, formulae and rearranging formulae	A	67 F	2.3E	F2.3E derive a formula or expression
F	11	Expressions, formulae and rearranging formulae	A	68 F	2.3F	F2.3F change the subject of a formula where the subject appears once
H	18	Function notation	A	204 H	3.2A	H3.2A understand the concept that a function is a mapping between elements of two sets
H	18	Function notation	A	205 H	3.2B	H3.2B use function notations of the form $f(x) = \dots$ and $f : x \rightarrow \dots$
H	18	Function notation	A	206 H	3.2C	H3.2C understand the terms 'domain' and 'range' and which values may need to be excluded from a domain
H	18	Function notation	A	207 H	3.2D	H3.2D understand and find the composite function $fg$ and the inverse function $f^{-1}$
H	16	Harder graphs and transformation of graphs	A	196 H	3.3A	H3.3A recognise, plot and draw graphs of polynomial and trigonometric functions. (more detail in spec)
H	16	Harder graphs and transformation of graphs	A	197 H	3.3B	H3.3B apply to the graph of $y = f(x)$ the transformations $y = f(x) + a$ , $y = f(ax)$ , $y = f(x + a)$ , $y = af(x)$ for linear, quadratic, sine and cosine functions
H	16	Harder graphs and transformation of graphs	A	198 H	3.3C	H3.3C interpret and analyse transformations of functions and write the functions algebraically
H	16	Harder graphs and transformation of graphs	A	199 H	3.3D	H3.3D find the gradients of non-linear graphs
H	16	Harder graphs and transformation of graphs	A	200 H	3.3E	H3.3E find the intersection points of two graphs, one linear ( $y_1$ ) and one non-linear ( $y_2$ ), and recognise that the solutions correspond to the solutions of $y_2 - y_1 = 0$
F	12	Linear equations and inequalities	A	69 F	2.4A	F2.4A solve linear equations, with integer or fractional coefficients, in one unknown in which the unknown appears on either side or both sides of the equation
F	12	Linear equations and inequalities	A	70 F	2.4B	F2.4B set up simple linear equations from given data
F	12	Linear equations and inequalities	A	71 F	2.8A	F2.8A understand and use inequality symbols
F	12	Linear equations and inequalities	A	72 F	2.8B	F2.8B understand and use the convention for open and closed intervals on a number line
F	12	Linear equations and inequalities	A	73 F	2.8C	F2.8C solve simple linear inequalities in one variable and represent the solution set on a number line
F	15	Linear graphs	A	78 F	3.3B	F3.3B understand and use conventions for rectangular Cartesian coordinates
F	15	Linear graphs	A	79 F	3.3C	F3.3C plot points (x, y) in any of the four quadrants or locate points with given coordinates
F	15	Linear graphs	A	80 F	3.3D	F3.3D determine the coordinates of points identified by geometrical information
F	15	Linear graphs	A	81 F	3.3E	F3.3E determine the coordinates of the midpoint of a line segment, given the coordinates of the two end points
F	15	Linear graphs	A	82 F	3.3F	F3.3F draw and interpret straight line conversion graphs
F	15	Linear graphs	A	83 F	3.3G	F3.3G find the gradient of a straight line
F	15	Linear graphs	A	84 F	3.3H	F3.3H recognise that equations of the form $y = mx + c$ are straight line graphs with gradient m and intercept on the y-axis at the point (0, c)
F	15	Linear graphs	A	85 F	3.3I	F3.3I recognise, generate points and plot graphs of linear functions
F	15	Linear graphs	A	86 F	2.8D	F2.8D represent simple linear inequalities on rectangular Cartesian graphs
F	15	Linear graphs	A	87 F	2.8E	F2.8E identify regions on rectangular Cartesian graphs defined by simple linear inequalities
H	14	Linear graphs	A	189 H	3.3F	H3.3F calculate the gradient of a straight line given the coordinates of two points
H	14	Linear graphs	A	190 H	3.3G	H3.3G find the equation of a straight line parallel to a given line; find the equation of a straight line perpendicular to a given line
H	14	Linear graphs	A	191 H	2.8B	H2.8B identify harder examples of regions defined by linear inequalities
F	16	Quadratic equations and graphs	A	88 F	2.2E	F2.2E expand the product of two simple linear expressions
F	16	Quadratic equations and graphs	A	89 F	2.2F	F2.2F understand the concept of a quadratic expression and be able to factorise such expressions (limited to $x^2 + bx + c$ )
F	16	Quadratic equations and graphs	A	90 F	2.7A	F2.7A solve quadratic equations by factorisation (limited to $x^2 + bx + c = 0$ )
F	16	Quadratic equations and graphs	A	91 F	3.3I	F3.3I recognise, generate points and plot graphs of quadratic functions
H	15	Quadratic equations, inequalities and graphs	A	192 H	2.7A	H2.7A solve quadratic equations by factorisation
H	15	Quadratic equations, inequalities and graphs	A	193 H	2.7B	H2.7B solve quadratic equations by using the quadratic formula or completing the square
H	15	Quadratic equations, inequalities and graphs	A	194 H	2.7C	H2.7C form and solve quadratic equations from data given in a context
H	15	Quadratic equations, inequalities and graphs	A	195 H	2.8A	H2.8A solve quadratic inequalities in one unknown and represent the solution set on a number line
F	14	Real life graphs	A	77 F	3.3A	F3.3A interpret information presented in a range of linear and non-linear graphs
F	13	Sequences	A	74 F	3.1A	F3.1A generate terms of a sequence using term-to-term and position-to-term definitions of the sequence
F	13	Sequences	A	75 F	3.1B	F3.1B find subsequent terms of an integer sequence and the rule for generating it
F	13	Sequences	A	76 F	3.1C	F3.1C use linear expressions to describe the nth term of arithmetic sequences
H	12	Sequences	A	186 H	3.1A	H3.1A understand and use common difference (d) and first term (a) in an arithmetic sequence
H	12	Sequences	A	187 H	3.1B	H3.1B know and use nth term $= a + (n - 1)d$

H	12 Sequences	A	188 H	3.1C	H3.1C	find the sum of the first n terms of an arithmetic series (Sn)
F	17 Simultaneous equations	A	92 F	2.6A	F2.6A	calculate the exact solution of two simultaneous equations in two unknowns
H	17 Simultaneous equations	A	201 H	2.6A	H2.6A	calculate the exact solution of two simultaneous equations in two unknowns
H	17 Simultaneous equations	A	202 H	2.6B	H2.6B	interpret the equations as lines and the common solution as the point of intersection
H	17 Simultaneous equations	A	203 H	2.7D	H2.7D	solve simultaneous equations in two unknowns, one equation being linear and the other being quadratic
H	27 Advanced trigonometry	G	221 H	4.8C	H4.8C	understand and use the sine and cosine rules for any triangle
H	27 Advanced trigonometry	G	222 H	4.8D	H4.8D	use Pythagoras' theorem in three dimensions
H	27 Advanced trigonometry	G	223 H	4.8E	H4.8E	understand and use the formula $\frac{1}{2} ab C \sin$ for the area of a triangle
H	27 Advanced trigonometry	G	224 H	4.8F	H4.8F	apply trigonometrical methods to solve problems in three dimensions, including finding the angle between a line and a plane
H	26 Circle properties	G	218 H	4.6A	H4.6A	understand and use the internal and external intersecting chord properties
H	26 Circle properties	G	219 H	4.6B	H4.6B	recognise the term 'cyclic quadrilateral'
H	26 Circle properties	G	220 H	4.6C	H4.6C	understand and use angle properties of the circle (circle theorems in spec)
F	23 Circles and cylinders	G	123 F	4.6A	F4.6A	recognise the terms 'centre', 'radius', 'chord', 'diameter', 'circumference', 'tangent', 'arc', 'sector' and 'segment' of a circle
F	23 Circles and cylinders	G	124 F	4.6B	F4.6B	understand chord and tangent properties of circles
F	23 Circles and cylinders	G	125 F	4.9E	F4.9E	find circumferences and areas of circles using relevant formulae; find perimeters and areas of semicircles
F	23 Circles and cylinders	G	126 F	4.10D	F4.10D	find the surface area of a cylinder
F	23 Circles and cylinders	G	127 F	4.10E	F4.10E	find the volume of prisms, including cuboids and cylinders, using an appropriate formula
F	21 Compound measures	G	116 F	4.4F	F4.4F	understand and use the relationship between average speed, distance and time
F	21 Compound measures	G	117 F	4.4G	F4.4G	use compound measure such as speed, density and pressure
F	27 Constructions and bearings	G	147 F	4.5B	F4.5B	construct triangles and other two-dimensional shapes using a combination of a ruler, a protractor and compasses
F	27 Constructions and bearings	G	148 F	4.5D	F4.5D	use straight edge and compasses to: (i)construct the perpendicular bisector of a line segment & (ii) construct the bisector of an angle
H	21 Geometry of shapes	G	213 H	4.7A	H4.7A	provide reasons, using standard geometrical statements, to support numerical values for angles obtained in any geometrical context involving lines, polygons and circles
F	18 Measures, bearings and scale drawings	G	93 F	4.4A	F4.4A	interpret scales on a range of measuring instruments
F	18 Measures, bearings and scale drawings	G	94 F	4.4B	F4.4B	calculate time intervals in terms of the 24-hour and the 12-hour clock
F	18 Measures, bearings and scale drawings	G	95 F	4.4C	F4.4C	make sensible estimates of a range of measures
F	18 Measures, bearings and scale drawings	G	96 F	4.4D	F4.4D	understand angle measure including three-figure bearings
F	18 Measures, bearings and scale drawings	G	97 F	4.1A	F4.1A	distinguish between acute, obtuse, reflex and right angles
F	18 Measures, bearings and scale drawings	G	98 F	4.4E	F4.4E	measure an angle to the nearest degree
F	18 Measures, bearings and scale drawings	G	99 F	4.5A	F4.5A	measure and draw lines to the nearest millimetre
F	18 Measures, bearings and scale drawings	G	100 F	4.5C	F4.5C	solve problems using scale drawings
F	18 Measures, bearings and scale drawings	G	101 F	4.11B	F4.11B	use and interpret maps and scale drawings
F	18 Measures, bearings and scale drawings	G	102 F	4.9A	F4.9A	convert measurements within the metric system to include linear and area units
F	18 Measures, bearings and scale drawings	G	103 F	4.10F	F4.10F	convert between units of volume within the metric system
F	22 Perimeter, area and volume	G	118 F	4.9B	F4.9B	find the perimeter of shapes made from triangles and rectangles
F	22 Perimeter, area and volume	G	119 F	4.9C	F4.9C	find the area of simple shapes using the formulae for the areas of triangles and rectangles
F	22 Perimeter, area and volume	G	120 F	4.9D	F4.9D	find the area of parallelograms and trapezia
F	22 Perimeter, area and volume	G	121 F	4.10C	F4.10C	find the surface area of simple shapes using the area formulae for triangles and rectangles
F	22 Perimeter, area and volume	G	122 F	4.10E	F4.10E	find the volume of prisms, including cuboids and cylinders, using an appropriate formula
H	23 Perimeter, area and volume	G	214 H	4.9A	H4.9A	find perimeters and areas of sectors of circles
H	23 Perimeter, area and volume	G	215 H	4.10A	H4.10A	find the surface area and volume of a sphere and a right circular cone using relevant formulae
F	20 Polygons	G	113 F	4.2A	F4.2A	recognise and give the names of polygons
F	20 Polygons	G	114 F	4.2D	F4.2D	understand the term 'regular polygon' and calculate interior and exterior angles of regular polygons
F	20 Polygons	G	115 F	4.2E	F4.2E	understand and use the angle sum of polygons
F	25 Pythagoras' theorem and Trigonometry	G	141 F	4.8A	F4.8A	know, understand and use Pythagoras' theorem in two dimensions
F	25 Pythagoras' theorem and Trigonometry	G	142 F	4.8B	F4.8B	know, understand and use sine, cosine and tangent of acute angles to determine lengths and angles of a right-angled triangle
F	25 Pythagoras' theorem and Trigonometry	G	143 F	4.8C	F4.8C	apply trigonometrical methods to solve problems in two dimensions
H	24 Pythagoras' theorem and trigonometry	G	216 H	4.8A	H4.8A	understand and use sine, cosine and tangent of obtuse angles
H	24 Pythagoras' theorem and trigonometry	G	217 H	4.8B	H4.8B	understand and use angles of elevation and depression
H	28 Similar shapes	G	225 H	4.11A	H4.11A	understand that areas of similar figures are in the ratio of the square of corresponding sides
H	28 Similar shapes	G	226 H	4.11B	H4.11B	understand that volumes of similar figures are in the ratio of the cube of corresponding sides
H	28 Similar shapes	G	227 H	4.11C	H4.11C	use areas and volumes of similar figures in solving problems
F	26 Similarity and congruence in 2D	G	144 F	4.2F	F4.2F	understand congruence as meaning the same shape and size
F	26 Similarity and congruence in 2D	G	145 F	4.2G	F4.2G	understand that two or more polygons with the same shape and size are said to be congruent to each other
F	26 Similarity and congruence in 2D	G	146 F	4.11A	F4.11A	understand and use the geometrical properties that similar figures have corresponding lengths in the same ratio but corresponding angles remain unchanged
F	19 Symmetry, shapes, parallel lines and angle facts	G	104 F	4.3A	F4.3A	identify any lines of symmetry and the order of rotational symmetry of a given two-dimensional figure
F	19 Symmetry, shapes, parallel lines and angle facts	G	105 F	4.1B	F4.1B	use angle properties of intersecting lines, parallel lines and angles on a straight line
F	19 Symmetry, shapes, parallel lines and angle facts	G	106 F	4.1C	F4.1C	understand the exterior angle of a triangle property and the angle sum of a triangle property
F	19 Symmetry, shapes, parallel lines and angle facts	G	107 F	4.1D	F4.1D	understand the terms 'isosceles', 'equilateral' and 'right-angled triangles' and the angle properties of these triangles
F	19 Symmetry, shapes, parallel lines and angle facts	G	108 F	4.2B	F4.2B	understand and use the term 'quadrilateral' and the angle sum property of quadrilaterals
F	19 Symmetry, shapes, parallel lines and angle facts	G	109 F	4.2C	F4.2C	understand and use the properties of the parallelogram, rectangle, square, rhombus, trapezium and kite
F	19 Symmetry, shapes, parallel lines and angle facts	G	110 F	4.7A	F4.7A	give informal reasons, where required, when arriving at numerical solutions to geometrical problems
F	19 Symmetry, shapes, parallel lines and angle facts	G	111 F	4.10A	F4.10A	recognise and give the names of solids
F	19 Symmetry, shapes, parallel lines and angle facts	G	112 F	4.10B	F4.10B	understand the terms 'face', 'edge' and 'vertex' in the context of 3-D solids
F	24 Transformations	G	128 F	5.2A	F5.2A	understand that rotations are specified by a centre and an angle
F	24 Transformations	G	129 F	5.2B	F5.2B	rotate a shape about a point through a given angle
F	24 Transformations	G	130 F	5.2C	F5.2C	recognise that an anticlockwise rotation is a positive angle of rotation and a clockwise rotation is a negative angle of rotation
F	24 Transformations	G	131 F	5.2D	F5.2D	understand that reflections are specified by a mirror line
F	24 Transformations	G	132 F	5.2E	F5.2E	construct a mirror line given an object and reflect a shape given a mirror line
F	24 Transformations	G	133 F	5.2F	F5.2F	understand that translations are specified by a distance and direction
F	24 Transformations	G	134 F	5.2G	F5.2G	translate a shape

F	24 Transformations	G	135 F	5.2H	F5.2H	understand and use column vectors in translations
F	24 Transformations	G	136 F	5.2I	F5.2I	understand that rotations, reflections and translations preserve length and angle so that a transformed shape under any of these transformations remains congruent to the original shape
F	24 Transformations	G	137 F	5.2J	F5.2J	understand that enlargements are specified by a centre and a scale factor
F	24 Transformations	G	138 F	5.2K	F5.2K	understand that enlargements preserve angles and not lengths
F	24 Transformations	G	139 F	5.2L	F5.2L	enlarge a shape given the scale factor
F	24 Transformations	G	140 F	5.2M	F5.2M	identify and give complete descriptions of transformations
H	29 Vectors	G	228 H	5.1A	H5.1A	understand that a vector has both magnitude and direction
H	29 Vectors	G	229 H	5.1B	H5.1B	understand and use vector notation including column vectors
H	29 Vectors	G	230 H	5.1C	H5.1C	multiply vectors by scalar quantities
H	29 Vectors	G	231 H	5.1D	H5.1D	add and subtract vectors
H	29 Vectors	G	232 H	5.1E	H5.1E	calculate the modulus (magnitude) of a vector
H	29 Vectors	G	233 H	5.1F	H5.1F	find the resultant of two or more vectors
H	29 Vectors	G	234 H	5.1G	H5.1G	apply vector methods for simple geometrical proofs
F	7 Arithmetic of fractions	N	44 F	1.2F	F1.2F	use common denominators to add and subtract fractions and mixed numbers
F	7 Arithmetic of fractions	N	45 F	1.2H	F1.2H	understand and use fractions as multiplicative inverses
F	7 Arithmetic of fractions	N	46 F	1.2I	F1.2I	multiply and divide fractions and mixed numbers
H	1 Decimals	N	166 H	1.3A	H1.3A	convert recurring decimals into fractions
F	2 Decimals	N	8 F	1.3A	F1.3A	use decimal notation
F	2 Decimals	N	9 F	1.3B	F1.3B	understand place value
F	2 Decimals	N	10 F	1.3C	F1.3C	order decimals
F	2 Decimals	N	11 F	1.3D	F1.3D	convert a decimal to a fraction or percentage
F	2 Decimals	N	12 F	1.3E	F1.3E	recognise that a terminating decimal is a fraction
F	2 Decimals	N	13 F	1.8B	F1.8B	round to a given number of significant figures or decimal places
F	2 Decimals	N	14 F	1.8C	F1.8C	identify upper and lower bounds where values are given to a degree of accuracy
F	2 Decimals	N	15 F	1.8D	F1.8D	use estimation to evaluate approximations to numerical calculations
F	2 Decimals	N	16 F	1.11A	F1.11A	use a scientific electronic calculator to determine numerical results
H	7 Degree of accuracy	N	173 H	1.8A	H1.8A	solve problems using upper and lower bounds where values are given to a degree of accuracy
F	4 Fractions	N	23 F	1.2A	F1.2A	understand and use equivalent fractions, simplifying a fraction by cancelling common factors
F	4 Fractions	N	24 F	1.2B	F1.2B	understand and use mixed numbers and vulgar fractions
F	4 Fractions	N	25 F	1.2C	F1.2C	identify common denominators
F	4 Fractions	N	26 F	1.2D	F1.2D	order fractions and calculate a given fraction of a given quantity
F	4 Fractions	N	27 F	1.2E	F1.2E	express a given number as a fraction of another number
F	4 Fractions	N	28 F	1.2G	F1.2G	convert a fraction to a decimal or percentage
F	9 Indices and standard form	N	53 F	1.4C	F1.4C	use index notation and index laws for multiplication and division of positive and negative integer powers including zero
F	9 Indices and standard form	N	54 F	1.9A	F1.9A	calculate with and interpret numbers in the form $a \times 10^n$ where n is an integer and a is between 1 and 10
H	6 Indices and standard form	N	172 H	1.9A	H1.9A	solve problems involving standard form
F	1 Integers and place value	N	1 F	1.1A	F1.1A	understand and use integers (positive, negative and zero)
F	1 Integers and place value	N	2 F	1.1B	F1.1B	understand place value
F	1 Integers and place value	N	3 F	1.1C	F1.1C	use directed numbers in practical situations
F	1 Integers and place value	N	4 F	1.1D	F1.1D	order integers
F	1 Integers and place value	N	5 F	1.1E	F1.1E	use the four rules of addition, subtraction, multiplication and division
F	1 Integers and place value	N	6 F	1.1F	F1.1F	use brackets and the hierarchy of operations
F	1 Integers and place value	N	7 F	1.8A	F1.8A	round integers to a given power of 10
H	4 Percentages	N	170 H	1.6A	H1.6A	use repeated percentage change
H	4 Percentages	N	171 H	1.6B	H1.6B	solve compound interest problems
F	5 Percentages	N	29 F	1.6A	F1.6A	understand that 'percentage' means 'number of parts per 100'
F	5 Percentages	N	30 F	1.6B	F1.6B	express a given number as a percentage of another number
F	5 Percentages	N	31 F	1.6C	F1.6C	express a percentage as a fraction and as a decimal
F	5 Percentages	N	32 F	1.6D	F1.6D	understand the multiplicative nature of percentages as operators
F	5 Percentages	N	33 F	1.6E	F1.6E	solve simple percentage problems, including percentage increase and decrease
F	5 Percentages	N	34 F	1.6F	F1.6F	use reverse percentages
F	5 Percentages	N	35 F	1.6G	F1.6G	use compound interest and depreciation
F	6 Ratio and proportion	N	36 F	1.7A	F1.7A	use ratio notation, including reduction to its simplest form and its various links to fraction notation
F	6 Ratio and proportion	N	37 F	1.7B	F1.7B	divide a quantity in a given ratio or ratios
F	6 Ratio and proportion	N	38 F	1.7C	F1.7C	use the process of proportionality to evaluate unknown quantities
F	6 Ratio and proportion	N	39 F	1.7D	F1.7D	calculate an unknown quantity from quantities that vary in direct proportion
F	6 Ratio and proportion	N	40 F	1.7E	F1.7E	solve word problems about ratio and proportion
F	6 Ratio and proportion	N	41 F	1.10A	F1.10A	use and apply number in everyday personal, domestic or community life
F	6 Ratio and proportion	N	42 F	1.10B	F1.10B	carry out calculations using standard units of mass, length, area, volume and capacity
F	6 Ratio and proportion	N	43 F	1.10C	F1.10C	understand and carry out calculations using time, and carry out calculations using money, including converting between currencies
F	8 Set language, notation and Venn diagrams	N	47 F	1.5A	F1.5A	understand the definition of a set
F	8 Set language, notation and Venn diagrams	N	48 F	1.5B	F1.5B	use set notation for and, or and element of.
F	8 Set language, notation and Venn diagrams	N	49 F	1.5C	F1.5C	understand the concept of the universal set and the empty set and the symbols for these sets
F	8 Set language, notation and Venn diagrams	N	50 F	1.5D	F1.5D	understand and use the complement of a set
F	8 Set language, notation and Venn diagrams	N	51 F	1.5E	F1.5E	use Venn diagrams to represent sets
F	8 Set language, notation and Venn diagrams	N	52 F	6.3D	F6.3D	find probabilities from a Venn diagram
H	8 Set language, notation and Venn diagrams	N	174 H	1.5A	H1.5A	understand sets defined in algebraic terms, and understand and use subsets
H	8 Set language, notation and Venn diagrams	N	175 H	1.5B	H1.5B	use Venn diagrams to represent sets and the number of elements in sets
H	8 Set language, notation and Venn diagrams	N	176 H	1.5C	H1.5C	use the notation $n(A)$ for the number of elements in the set A
H	8 Set language, notation and Venn diagrams	N	177 H	1.5D	H1.5D	use sets in practical situations

F	3	Special numbers and powers	N	17	F	1.1G	F1.1G	use the terms 'odd', 'even', 'prime numbers', 'factors' and 'multiples'
F	3	Special numbers and powers	N	18	F	1.1H	F1.1H	identify prime factors, common factors and common multiples
F	3	Special numbers and powers	N	19	F	1.4A	F1.4A	identify square numbers and cube numbers
F	3	Special numbers and powers	N	20	F	1.4B	F1.4B	calculate squares, square roots, cubes and cube roots
F	3	Special numbers and powers	N	21	F	1.4D	F1.4D	express integers as product of powers of prime factors
F	3	Special numbers and powers	N	22	F	1.4E	F1.4E	find highest common factors (HCF) and lowest common multiples (LCM)
H	2	Special numbers and powers	N	167	H	1.4A	H1.4A	understand the meaning of surds
H	2	Special numbers and powers	N	168	H	1.4B	H1.4B	manipulate surds, including rationalising a denominator
H	2	Special numbers and powers	N	169	H	1.4C	H1.4C	use index laws to simplify and evaluate numerical expressions involving integer, fractional and negative powers
F	28	Graphical representation of data	S	149	F	6.1A	F6.1A	use different methods of presenting data
F	28	Graphical representation of data	S	150	F	6.1B	F6.1B	use appropriate methods of tabulation to enable the construction of statistical diagrams
F	28	Graphical representation of data	S	151	F	6.1C	F6.1C	interpret statistical diagrams
H	30	Graphical representation of data	S	235	H	6.1A	H6.1A	construct and interpret histograms
H	30	Graphical representation of data	S	236	H	6.1B	H6.1B	construct cumulative frequency diagrams from tabulated data
H	30	Graphical representation of data	S	237	H	6.1C	H6.1C	use cumulative frequency diagrams
F	30	Probability	S	156	F	6.3A	F6.3A	understand the language of probability
F	30	Probability	S	157	F	6.3B	F6.3B	understand and use the probability scale
F	30	Probability	S	158	F	6.3C	F6.3C	understand and use estimates or measures of probability from theoretical models
F	30	Probability	S	159	F	6.3D	F6.3D	find probabilities from a Venn diagram
F	30	Probability	S	160	F	6.3E	F6.3E	understand the concepts of a sample space and an event, and how the probability of an event happening can be determined from the sample space
F	30	Probability	S	161	F	6.3F	F6.3F	list all the outcomes for single events and for two successive events in a systematic way
F	30	Probability	S	162	F	6.3G	F6.3G	estimate probabilities from previously collected data
F	30	Probability	S	163	F	6.3H	F6.3H	calculate the probability of the complement of an event happening
F	30	Probability	S	164	F	6.3I	F6.3I	use the addition rule of probability for mutually exclusive events
F	30	Probability	S	165	F	6.3J	F6.3J	understand and use the term 'expected frequency'
H	32	Probability	S	242	H	6.3A	H6.3A	draw and use tree diagrams
H	32	Probability	S	243	H	6.3B	H6.3B	determine the probability that two or more independent events will occur
H	32	Probability	S	244	H	6.3C	H6.3C	use simple conditional probability when combining events
H	32	Probability	S	245	H	6.3D	H6.3D	apply probability to simple problems
F	29	Statistical measures	S	152	F	6.2A	F6.2A	understand the concept of average
F	29	Statistical measures	S	153	F	6.2B	F6.2B	calculate the mean, median, mode and range for a discrete data set
F	29	Statistical measures	S	154	F	6.2C	F6.2C	calculate an estimate for the mean for grouped data
F	29	Statistical measures	S	155	F	6.2D	F6.2D	identify the modal class for grouped data
H	31	Statistical measures	S	238	H	6.2A	H6.2A	estimate the median from a cumulative frequency diagram
H	31	Statistical measures	S	239	H	6.2B	H6.2B	understand the concept of a measure of spread
H	31	Statistical measures	S	240	H	6.2C	H6.2C	find the interquartile range from a discrete data set
H	31	Statistical measures	S	241	H	6.2D	H6.2D	estimate the interquartile range from a cumulative frequency diagram