No.	Topic	Skills	Explanation	Prior learning
01	Brackets	Working with algebraic expressions involving the expansion of brackets	• $a(bx \pm c) + d(ex \pm f)$ • $ax(bx \pm c)$ • $(ax \pm b)(cx^2 + dx + e)$ • $(ax \pm b)^2$ • $(ax \pm b)^3$	Multiplying out single brackets MTH 414a
02	Factorising	Factorising an algebraic expression	• Common factor • Difference of 2 squares $p^2x^2 - a^2$ • Trinomials with unitary and non-unitary x^2 coefficient • Combinations of the above	Factorising with a numerical common factor MTH 414b
03	Completing the square	Completing the square in a quadratic expression with unitary x^2 coefficient	• Writing quadratics of the form $x^2 + bx + c$ in the form $(x + p)^2 + q$	N/A
Possible assessment tasks: • SQA Expressions & Formulae Assessment Standard 1.2 • Rigour Maths E+F 1.2a, 1.2b, 1.2c				
04	Percentages	Working with reverse percentages	• Use reverse percentages to calculate an original quantity	% increase, decrease MNU 407a
		Working with appreciation/depreciation	• Appreciation including compound interest • Depreciation	
05	Fractions	Working with fractions	• Operations and combinations of operations on fractions including mixed numbers (+, -, ×, ÷)	+, -, × fractions, changing between mixed numbers and improper fractions MTH 407b
Possible assessment tasks: • SQA Applications Assessment Standard 1.3 • Rigour Maths App 1.3a, 1.3b				
06	Equations & Inequalities	Working with linear equations and inequalities	• Equations/inequalities with brackets • Equations/inequalities with fractions • Inequalities where sign changes direction	$x + a = b$ $ax = b$ $ax + b = c$ $ax + b = cx + d$ $ax + b > c$ (or equiv forms) MTH 415a
07	Simultaneous equations	Working with simultaneous equations	• Construct from text • Graphical solution • Algebraic solution	N/A
08	Changing the subject of a formula	Changing the subject of a formula	• Linear formula • Formula involving a simple square or square root	Basic 1/2 step changing the subject

				N/A
Possible assessment tasks: • Rigour Maths Rel 1.1c, 1.1d, 1.1e				
09	Rounding	Rounding to a given number of significant figures		Rounding to nearest 10/100/1000, 1 figure of accuracy, 1/2/3 decimal places MNU 301a
10	Arcs and sectors	Circle geometry	• Calculating the length of an arc • Calculating the area of a sector • Calculating the radius/diameter/angle when given the arc/sector area • Solving problems in context • Non-calculator questions	Perimeter, circumference and area of circle, composite areas MNU 311a MTH 311b MTH 416b
11	Volumes of solids	Calculating the volume of a standard solid	• Sphere, cone pyramid • Calculating the radius/height when given the volume • Problems in context • Composite volumes • Non-calculator questions	Cuboid, cube, prisms including cylinder, composite areas MNU 311a MTH 411c MTH 416b
Possible assessment tasks: • SQA Expressions & Formulae Assessment Standard 1.4 • Rigour Maths E+F 1.4a, 1.4b, 1.4c				
13	Surds	Working with surds	• Simplifying surds • Rationalising the denominator	Powers and roots MTH 306a
14	Indices	Simplifying expressions using the laws of indices	• × and ÷ using + and – indices including fractions • $(ab)^m = a^m b^m$ • $a^{\frac{m}{n}} = \sqrt[n]{a^m}$ • Calculations using scientific notation	Writing numbers in scientific notation MTH 406b
15	Algebraic Fractions	Reducing an algebraic fraction to its simplest form	• $\frac{a}{b}$ where a, b are of the form $(mx + p)^n$	Simplifying, equivalent numerical fractions MTH 207c
		Applying the four operations to algebraic fractions	• +, - ×, ÷	+, - ×, ÷ numerical fractions

				MTH 407b
Possible assessment tasks: • SQA Expressions & Formulae Assessment Standard 1.1 • SQA Expressions & Formulae Assessment Standard 1.3 • Rigour Maths E+F 1.1a, 1.1b, 1.3				
16	Straight Line	Determining the gradient of a straight line given two points	Using: • $m = \frac{y_2 - y_1}{x_2 - x_1}$	m = vert/hor, drawing a straight line from a table of values, recognising the equation of a straight line in the form $y = c$, $x = a$, $y = mx + c$ MTH 413b MTH 413c MTH 413d
		Determining the equation of a straight line	• Use the formula $y - b = m(x - a)$ to find the equation of a straight line, given two points or one point and the gradient • Identify gradient and y-intercept from various forms of the equation of a straight line	
		Identifying the gradient and y-intercept from various forms of the equation of a straight line	• $ax + by + c = 0$, etc	
17	Functions	Use functional notation $f(x)$	• Evaluate $f(a)$ • Solve $f(a) = b$ • Link to graphical notation	Substitution, solving 2-step equations MTH 314a MTH 315a
18	Statistics	Comparing data sets using statistics	Compare data sets using calculated/determined: • Semi-interquartile range • Standard deviation	Mean, median, mode and range MTH 420b
		Forming a linear model from a given set of data	• Determine the equation of a best fitting-straight line on a scatter graph and use it to estimate y given x.	Plotting, reading coordinates, $y - b = m(x - a)$, substitution MTH 318a MTH 314a
Possible assessment tasks: • SQA Relationships Assessment Standard 1.1 • SQA Applications Assessment Standard 1.4 • Rigour Maths REL 1.1a, 1.1b, APP 1.4				
18	Pythagoras	Applying Pythagoras' Theorem	• Converse • Three dimensions • In circles with segments removed • Distance between two points	Using Pythagoras to calculate length in a right angled or isosceles triangle

				MTH 416a
19	Angles in circles	Applying the properties of shapes to determine an angle involving at least two steps	• Quadrilaterals/triangles /polygons/circles • Relationship in a circle between the centre, chord and perpendicular bisector	Complementary, supplementary angles, angles in fully/half turns, angles in a triangle, corresponding, alternate angles MTH 317a
20	Similar shapes	Using similarity	• Length • Area • Volume	Enlargement, reduction MTH 317c
Possible assessment tasks: • SQA Relationships Assessment Standard 1.4 • Rigour Maths REL 1.4a, 1.4b, 1.4c				
21	Quadratic equations	Solving a quadratic equation	• Solving from factorised form • Solving having factorised first • Graphical treatment	N/A
		Solving a quadratic equation using the quadratic formula	Using $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$	
		Using the discriminant to determine the nature of the roots	• Know and use the discriminant Determine the number and describe the nature of the roots using appropriate language	
22	Graphs of quadratic functions	Recognise and determine the equation of a quadratic function from its graph	• Equations of the form $y = kx^2$ and $y = k(x + p)^2 + q$	N/A
		Sketching a quadratic function	• Equations of the form $y = (ax - m)(bx - n)$ • Equations of the form • $y = k(x + p)^2 + q$	
		Identifying features of a quadratic function	Identify: • The nature and coordinates of the turning point • The equation of the axis of symmetry of a quadratic of the form $y = k(x + p)^2 + q$	
Possible assessment tasks: • SQA Relationships Assessment Standard 1.2, 1.3 • Rigour Maths REL 1.2, 1.3a, 1.3b				

23	Trigonometric graphs, equations & identities	Working with the graphs of trigonometric functions	• Basic graphs • Amplitude • Vertical translation • Multiple angle • Phase angle	N/A
		Working with trigonometric relationships in degrees	• Sine, cosine and tangents of angles from 0° to 360° • Period • Related angles • Solve basic equations • Use the identities $cos^2x + sin^2x = 1$ and $tanx = \frac{sinx}{cosx}$	
Possible assessment tasks: • SQA Relationships Assessment Standard 1.5 • Rigour Maths REL 1.5a, 1.5b				
24	Trigonometry in triangles	Calculating the area of a triangle using trigonometry	• $Area = \frac{1}{2}absinC$	A= ½ × b × h MNU 311a
		Using the sine and cosine rules to find a side or angle in a triangle	• $\frac{a}{sinA} = \frac{b}{sinB} = \frac{c}{sinC}$ • $a^2 = b^2 + c^2 - 2bccosA$ • $cosA = \frac{b^2 + c^2 - a^2}{2bc}$	Right-angled trigonometry MTH 416a
		Use bearings with trigonometry	• To find a distance or direction	3-figure bearings
Possible assessment tasks: • SQA Applications Assessment Standard 1.1 • Rigour Maths APP 1.1				
25	Vectors	Working with 2D vectors	• +, - 2D vectors using directed line segments	Plotting, reading coordinates, Pythagoras MTH 318a MTH 416a
		Working with 3D coordinates	• Determine coordinates of a point from a diagram representing a 3D object	
		Using vector components	• +, - 2D or 3D vectors using components	
		Calculating the magnitude of a vector	• Magnitude of a 2D or 3D vector	
Possible assessment tasks: • SQA Applications Assessment Standard 1.2 • Rigour Maths APP 1.2				