S5/6 NATIONAL 5 COURSE PLAN

TERM 1 August - October	Rounding	Significant Figures	Round to a number of significant figures
	Percentages	Money - percentages	Simple Interest (Revision)
			Compound Interest (Revision)
			Appreciation: Given the percentage
			Appreciation: Finding the percentage
			Depreciation: Given the percentage
			Depreciation: Finding the percentage
		Percentages	Use reverse percentages to calculate an original quantity
	Algebra	Changing the subject of the formula	Revision of linear equation
			Equation involving a simple square or square root and fractions
		Inequalities	Solve simple inequalities
	Straight Line	Gradient of a straight line	Determine the gradient of a straight line given two points, using the gradient formula
		Equation of a straight line	Equation of a straight-line y = mx + c = know m is gradient and c is y intercept
		Determining the equation of a straight line; given the gradient	Use the formula *y-b=m(x-a)* or equivalent to find the equation of a straight line, given one point and the gradient of the line
			Use the formula *y-b=m(x-a)* or equivalent to find the equation of a straight line, given two points to find the gradient of the line
		Identify gradient and y intercept from equation	Identify gradient and y -intercept from *y=mx+c*
			Ø Identify gradient and y-intercept from various forms of the equation of a straight line
		Function notation	Use functional notation *f(x)*
		Equation of a straight line	Equation of a straight line from scattergraph

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	Vectors	Vectors	Determining coordinates of a point from a diagram representing a 3D object
			Adding or subtracting two-dimensional vectors using directed line segments
			Adding or subtracting two- or three- dimensional vectors using components
			Magnitude of a vector
			Distance Formula
	Circle	Circle	Revise length of an arc & area of a sector
			Reverse - find angle or radius/diameter given other values
		Relationship between radius & tangent	Tangent to a circle
		Angles in semi-circle	Calculate angles in a semi-circle where right-angle is at the vertex on circumference from diameter using angles in triangle add up to 180 degrees.
	Algebra	Working with algebraic expressions involving expansion of brackets	$a(bx+c)+d(ex+f)$ N4 Revision
			$ax(bx+c)$ N4 Revision
			$(ax+b)(cx+d)$ Revision
			$(ax+b)(cx^2+dx+e)$ Revision
		Factorising an algebraic expression	Common factor
			Difference of 2 squares $p^2x^2 - a^2$
			Common factor with difference of 2 squares
			Trinomials with unitary x^2 coefficient
			Trinomials with non-unitary x^2 coefficient
			Completing the square in a quadratic expression with unitary x^2 coefficient
	Statistics	Statistics - Revision	Box Plot & Five Figure Summary
			Interquartile range & Semi-interquartile range
			Standard Deviation
			Probability - comparing events using equivalent fractions or percentages

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TERM 2 - October to December	Simultaneous Equations	Working with simultaneous equations	Construct from text
			Graphical solution
			Algebraic solution
	Sine & Cosine Rules	Area of a triangle	Area = ½absinC
		Sine Rule	Sine rule for side and angle
		Cosine Rule	Cosine rule for side and angle
		Bearings using trigonometry	To find a distance or direction - including bearings
	Indices & Surds	Working with surds	Simplification
			Collect like terms
			Remove brackets
			Rationalising denominators
		Simplifying expressions using the laws of indices	Multiplication and division using positive and negative indices including fractions
			Simplifying expressions with indices including brackets
	Revision - Perimeter, Area, Surface Area and Volume	Perimeter and Area	Revise perimeter and area of 2D shapes
		Surface area	Revise surface area of 3D shapes
		Volume	Revise volume of 3D shapes
	Similarity	Linear scale factor	Enlarge and reduce mathematically similar 2D shapes using a linear scale factor
		Area scale factor	Enlarge or reduce mathematically similar shapes using an area scale factor
		Volume scale factor	Enlarge or reduce mathematically similar shapes using an volume scale factor
		Scale factor problems	Calculate linear, area or volume scale factor to calculate missing length
			Interrelationship of scale — length, area and volume

TERM 3 January - March	Angles in a Circle	Converse of Pythagoras Theorem (1 period)	Converse of Pythagoras Theorem
		Angles in semi-circle	Use Pythagoras Theorem to calculate missing side
		Right angled triangles - Trigonometry (N4 Revision)	SOHCAHTOA - finding a side given a side and an angle
		Angles in semi-circle	Use SOHCAHTOA to calculate missing side or angle
		Angles in semi-circle	Ø Relationship in a circle between the centre, chord and perpendicular bisector
	Quadratics	Quadratic Functions	Function notation
			Recognise and determine the equation of a quadratic function from its graph - ♦ Equations of the form $y = kx^2$ and $y = (x+p)^2 + q$
			♦ Identify nature, coordinates of turning point and the equation of the axis of symmetry of a quadratic of the form $y=(x+p)^2+q$ where k=1 or -1
			♦ Roots
			♦ Graphically
			Sketching a quadratic function - ♦ Equations of the form $y = (x-m)(x-n)$ and $y=(x+p)^2+q$
			♦ Quadratic formula
			♦ Discriminant

	Algebraic Fractions	Algebraic Fractions	*a/b* * *c/d* where *a, b, c, d* can be simple constants or variables. * can be add, subtract, multiply or divide.
			a/b where *a, b* are of the form $(x+p)^n$ or $(x+p)(x+q)$
	Trig Graphs & Equations	Trigonometric Graphs and Functions	Basic graphs
			Amplitude
			Period
			Vertical translation
			Multiple angle
			Phase angle
		Working with trigonometric relationships in degrees - sin/cos/tan of angles 0-360, period, related angles, solve basic equations, identities	Sine, cosine and tangent of angles 0°– 360°
			Related angles
		Solving Trigonometric Equations	Solve basic equations
		Trigonometric Identities	Identities: $\sin^2x + \cos^2x = 1$; $\tan x = \sin x/\cos x$
	Polygons	Angles in polygons	Interior and exterior angles

TERM 4 - April to May	**REVISION FOR SQA EXAMS**	
	SQA EXAMS	