

S3 COURSE PLAN NATIONAL 4 ROUTE

TERM 1 August - October	Fractions, Decimals and Percentages	Mixed number fractions	Convert between mixed number and improper (top heavy) fractions
		Working with fractions - operations and combinations of operations on fractions including mixed numbers (+, -, x, ÷)	Add and subtract fractions with different denominators, including mixed numbers
			Multiply and divide fractions including mixed numbers
			Operations and combinations of operations on fractions including mixed numbers (Addition, subtraction, multiplication, division)
	Expressions and Equations	Collect like terms	Collect like terms and simplify expressions
		Substitution	Substitution into expressions including squares and square roots
		Changing the subject of the formula	Linear equation
			Equation involving a simple square or square root
		Solve equations	Solve simple equations - x term on one side
			Solve simple equations - x term on both sides
		Construction and solution of inequations	Solve inequalities - term on one side only
	Patterns and Relationships	Gradient of a straight line	Calculate gradient of a straight line - y distance over x distance
		Equation of a straight line	Equation of a straight-line $y = mx + c$ = know m is gradient and c is y intercept
			From a graph, calculate the gradient using vertical over horizontal and substitute into $y = mx + c$, along with y intercept from the graph
		Drawing the graph of a straight line	Given the equation of a straight line, draw the graph
		Drawing scatter graphs	Draw scatter graphs given a set of appropriate data
	Drawing the line of best fit on a scatter graph and estimating one value given the other (graphically)		

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TERM 2 - October to December	Chance and Uncertainty	Probability	Calculate probability of a simple event
			Calculate probability of an event
			Calculate probability using a two way table
			Compare different events to calculate best chance using equivalent fractions or percentages
	Data and Analysis	Frequency tables	Draw frequency tables and interpret
		Pie Charts	Read data from pie chart and interpret
	Statistics	Statistics	Draw pie chart given data
			Read data from stem-and-leaf diagrams (Revision)
			Draw stem-and-leaf diagram and interpret data
			Draw back-to-back stem-and-leaf diagram and interpret data
	Algebra	Expanding brackets	Mean, Median, Mode & Range
			Expand single brackets
			$a(bx+c)+d(ex+f)$
			$ax(bx+c)$
$(ax+b)(cx+d)$			
		$(ax+b)(cx^2+dx+e)$	

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TERM 3 - January to March	Angles, Symmetry and Transformation	Symmetry	Line symmetry
			Rotational symmetry
			Translation (as extension)
	Angles, Symmetry and Transformation	Right angles triangles - Pythagoras Theorem	Pythagoras Theorem
			Converse of Pythagoras Theorem (extension)
	Algebra	Factorising	Revision of factors and multiples
			Factorising into a single bracket
	Area	Area of 2D composite shapes	Revision of area of 2D shapes (triangles and quadrilaterals)
			Revision of area of a circle
			Area of Composite 2D Shapes
		3D shapes	Revision of properties of simple 3D shapes
		Surface area of 3D shapes	Calculate the surface area of 3D shapes - cube, cuboid, prisms
	Angles, Symmetry and Transformation	Right angled triangles - Trigonometry	SOHCAHTOA - finding a side given a side and an angle
			SOHCAHTOA - finding an angle given two sides

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TERM 4 - April to May	Scale Factor	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 a volume scale factor (extension)
		Problem solving	Calculate linear or area scale factor to calculate missing length or area of 2D shapes including triangles
	Rounding	Significant Figures	Round to a number of significant figures
	Money	Percentages	Calculate actual profit and loss
			Calculate percentage profit and loss
			Percentage increase and decrease