

Stage 11 Mathematics Curriculum Plan							
Unit	Core		Hinterland		NC Coverage	Assessment	Whole Education Opportunities
	Knowledge	Skills	Knowledge	Skills			
Closing the loop					<ul style="list-style-type: none"> 4SN4 	<ul style="list-style-type: none"> Review of prior learning Formative assessment Low stakes end of unit test 	<ul style="list-style-type: none"> Development of numeracy across whole curriculum.
Manipulating expressions	<ul style="list-style-type: none"> Rearranging and substituting for variables to obtain an algebraic expression in desired form Simplify and manipulate algebraic expressions by collecting like terms, multiplying a single term over a bracket, taking out common factors 	<ul style="list-style-type: none"> Solve practical problems involving algebraic expressions 	<ul style="list-style-type: none"> Uses of Quadratics in context of real-life scenarios such as in area of a field and calculating lengths of missing sides 	<ul style="list-style-type: none"> Links with graphical representations and Turning points 	<ul style="list-style-type: none"> 4SA11 4SA13 	<ul style="list-style-type: none"> Formal assessment including prior knowledge 	<ul style="list-style-type: none"> Explore history and development of algebra and numerical representation in various civilisations
Linear and non-linear graphs	<ul style="list-style-type: none"> Explore enlargement of 2D Explore graphs of exponential functions Explore graphs of trigonometric functions shapes 	<ul style="list-style-type: none"> Investigate the connections between graphs of functions and their translations Combine a series of transformations 	<ul style="list-style-type: none"> Use of exponential in context of real-life scenarios such as graphs used to model coronavirus infections and the "R rate" Use of Enlargement in context of real-life scenarios such as exploring different sizes of paper, and how photos can be enlarged for printing/canvases 	<ul style="list-style-type: none"> Use of exponential in context of real-life scenarios such as graphs used to model coronavirus infections and the "R rate" Movement/Translation of shapes/images in earlier and simpler computer games/animation 	<ul style="list-style-type: none"> 3SA13 4SA7 4SG1 	<ul style="list-style-type: none"> Review of prior learning Formative assessment Low stakes end of unit test 	<ul style="list-style-type: none"> Computer programming and science crossover Links to computer programming and spatial awareness
Expanding and Factorising	<ul style="list-style-type: none"> Expand and factorise with a single bracket, expand binomials Factorise quadratic expressions Explore graphs of exponential functions Explore graphs of trigonometric functions 	<ul style="list-style-type: none"> Solve quadratic and complex expressions by factorisation Solve equations equal to zero Investigate the connections between graphs of functions and their translations 	<ul style="list-style-type: none"> Use of exponential in context of real-life scenarios such as graphs used to model coronavirus infections and the "R rate" 	<ul style="list-style-type: none"> Quadratic graphs used to model the height of a ball being thrown or the shot put/discuss in the Olympics 	<ul style="list-style-type: none"> 3SA13 4SA7 	<ul style="list-style-type: none"> Pre-Public Examination 	<ul style="list-style-type: none"> Computer programming and science crossover
Changing the Subject	<ul style="list-style-type: none"> Change the subject of a simple formula Change the subject of a known formula Change a subject of a complex formula Understand how functions are created 	<ul style="list-style-type: none"> Rearranging complex formulars Solve problems involving functions 	<ul style="list-style-type: none"> Uses of Functions in context of real-life scenarios such as the mathematics and process of selecting a snack from a vending machine (inputs and outputs) 	<ul style="list-style-type: none"> Exploring links to Computer science 	<ul style="list-style-type: none"> 3WD6 	<ul style="list-style-type: none"> Review of prior learning Formative assessment Low stakes end of unit test 	<ul style="list-style-type: none"> Computer programming and science crossover
Functions	<ul style="list-style-type: none"> Explore graphs of exponential functions Explore graphs of trigonometric functions Explore three-dimensional shapes 	<ul style="list-style-type: none"> Investigate the connections between graphs of functions and their translations 	<ul style="list-style-type: none"> Use of exponential in context of real-life scenarios such as graphs used to model coronavirus infections and the "R rate" Uses of Quadratics in context of real-life scenarios such as in area of a field and calculating lengths of missing sides . 	<ul style="list-style-type: none"> Quadratic graphs used to model the height of a ball being thrown or the shot put/discuss in the Olympics s 	<ul style="list-style-type: none"> 4SG5 4SG10 4SG12 	<ul style="list-style-type: none"> Review of prior learning Formative assessment Low stakes end of unit test 	<ul style="list-style-type: none"> Links with architecture and civil engineering
Manipulative reasoning	<ul style="list-style-type: none"> Explore differences between direct and inverse proportion Understand how to find the terms of geometric progressions . 	<ul style="list-style-type: none"> Solve problems involving proportion 	<ul style="list-style-type: none"> Use of proportion in context of real-life scenarios such as the link between staff numbers and time taken to serve customers 	<ul style="list-style-type: none"> Investigate proportional graphs and links with modelling 	<ul style="list-style-type: none"> 3SR9 3WR6 	<ul style="list-style-type: none"> Review of prior learning Formative assessment Low stakes end of unit test 	<ul style="list-style-type: none"> Explore proportions in recipes, construction and populations
Geometric reasoning	<ul style="list-style-type: none"> Explore three-dimensional shapes 	<ul style="list-style-type: none"> Select appropriate rules to solve problems involving triangles in three dimensions 	<ul style="list-style-type: none"> Uses of Vectors in context of real-life scenarios such as in 	<ul style="list-style-type: none"> Solve problems using Maps and GPS 	<ul style="list-style-type: none"> 4SG15 	<ul style="list-style-type: none"> Review of prior learning 	<ul style="list-style-type: none"> Links to computer programming and spatial awareness

	<ul style="list-style-type: none"> Apply Pythagoras' theorem in three dimensions Apply trigonometry in three dimensions Know and use the sine rule Know and use the cosine rule Understand the rules of vector addition 	<p>Use vectors to create geometric arguments and proofs</p> <ul style="list-style-type: none"> Combine a series of transformations 	<p>examples of links with force and direction</p> <ul style="list-style-type: none"> Uses of Sine/Cosine rules in context of real-life scenarios such as in coordinates, music, ballistic trajectories, and GPS <p>Exploring links to physics</p>	<ul style="list-style-type: none"> Investigate with architecture of building 		<ul style="list-style-type: none"> Formative assessment Low stakes end of unit test 	
Algebraic reasoning	<ul style="list-style-type: none"> Understand how to find the terms of geometric progressions Solve inequalities Solve simultaneous equations Uses of Quadratics in context of real-life scenarios such as in area of a field and calculating lengths of missing sides 	<ul style="list-style-type: none"> Investigate geometric progressions Create and solve problems involving equations in contexts 	<ul style="list-style-type: none"> Use of patterns in context of real-life scenarios such as the patterns in Human DNA and Use of Simultaneous equations in context of real-life scenarios such as 2 different orders of food at a restaurant and calculating each items individual cost 	<ul style="list-style-type: none"> Explore links between patterns in nature and their mathematical sequence Calculating individual itemised costs of items ordered Extending this with profit and loss 	<ul style="list-style-type: none"> 4SA15 4SA12 	<ul style="list-style-type: none"> Pre-Public Examination 	<ul style="list-style-type: none"> Links with Science and Textiles Explore history and development of algebra and numerical representation in various civilisations
Transforming and Constructing	<ul style="list-style-type: none"> Construct and interpret histograms 	<ul style="list-style-type: none"> Analyse distributions of data sets Solve problems involving histograms 	<ul style="list-style-type: none"> Uses of Histograms in context of real-life scenarios such as in news articles/media and how data can be influenced/adjusted to fit various agendas or desired outcomes 	<ul style="list-style-type: none"> Analysing and comparing real life sets of Data 	<ul style="list-style-type: none"> 4SS3 	<ul style="list-style-type: none"> Review of prior learning Formative assessment Low stakes end of unit test 	<ul style="list-style-type: none"> Links with Geography and Science