Stage 10 Mathematics Curriculum Plan								
Unit	Core		Hinterland		NC Coverage	Assessment	Whole Education Opportunities	
	Knowledge	Skills	Knowledge	Skills				
Congruence, similarity and enlargement	• Explore enlargement of 2D shapes • Solve mixed problems involving similar shapes • Estimate with powers and roots • Calculate with powers and roots	• Investigate the transformation of 2D shapes • Explore the impact of rounding • Solve problems involving	• 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 • Use of powers and roots in context of real-life scenarios such as carpentry or mass production	• Movement/Translation of shapes/images in earlier and simpler computer games/animation • • Impact of rounding errors in accuracy of dimensions in carpentry, area for flooring in rooms, turf for gardening	• 4SN2 • 4SN3 • 4SN8	• Review of prior learning • Formative assessment • Low stakes end of unit test	• Development of numeracy across whole curriculum.	
Trigonometry (incl Pythagoras review)	• Find lengths and angles in right-angled triangles using trigonometry • Solve problems involving right-angled triangles using the sine, cosine or tangent ratios. • Use the angles of polygons to solve the problem	• Solve problems involving right-angled triangles using the sine, cosine or tangent ratios. • Finding missing sides and angles using trigonometry Use Pythagoras theorem to calculate a shorter side of right-angled triangle		• Pythagoras • Planning developments: estates, building.	• 4SA12	• Review of prior learning • Formative assessment • Low stakes end of unit test	• Explore history and development of algebra and numerical representation in various civilisations	
Representing solutions of equations and inequalities	• Manipulate algebraic fractions • Manipulate algebraic expression • Understand and use set notation • Solve quadratic equations •	• Solve inequalities • Use graphs to solve equations • Represent inequalities on a graph •	• Uses of Inequalities in context of real-life scenarios such as in examples where limits exist on height of entry to a ride, limits in budget and shopping • 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 • Uses of Quadratics in context of real-life scenarios such as in area of a field and calculating lengths of missing sides	• Travel • Calculating individual itemised costs of items ordered • Extending this with profit and loss • Links with graphical representations and Turning points •	• 4SA12	• Formal assessment including prior knowledge	• Explore history and development of algebra and numerical representation in various civilisations • Links to computer programming and spatial awareness	
Exact values. Surds	• Rational and irrational numbers • Manipulate expressions by simplifying surds •	• Manipulate expressions by simplifying surds	• Utilise surds in problems	• Uses of Surds linked with Pythagoras in context of real-life scenarios. • Explore the accuracy of values in Surd format and rounded values, and their consequent effect on the accuracy of final solutions	• Surds in problems linked with Pythagoras and lengths in contextual examples such as diagonal length of a room/sports pitch	• 4SN4	• Review of prior learning • Formative assessment • Low stakes end of unit test	• Development of numeracy across whole curriculum.

Working with circles	• Investigate geometric patterns using circles • Explore circle theorems	• Make and prove conjectures	• Use of Circle Theorems in context of real-life scenarios such as ship navigation or geometric patterns in nature	• Presenting a clear logical argument in a debate/ proof and persuasion in law/courtroom contexts	• 4SG4 • 3WR4	• Review of prior learning • Formative assessment • Low stakes end of unit test	• Links to congruence of patterns in textiles and architecture	
Vectors	• Explore the concept of a vector • Understand and represent vectors • Use and read vector notation • Explore vectors journey in shapes • Draw and understand addition and subtraction of vectors	• Solve problems involving vectors • Find and interpret areas under graphs • Investigate features of quadratic graphs	• Uses of Vectors in context of real-life scenarios such as in examples of links with force and direction • Use of exponential in context of real-life scenarios such as graphs used to model coronavirus infections and the “R rate”	• Exploring links to physics • Quadratic graphs used to model the height of a ball being thrown or the shot put/discuss in the Olympics	• 3SA13 • 4SR5 • 4SA8 • 4SA11	• Review of prior learning • Formative assessment • Low stakes end of unit test	• Links to computer programming and spatial awareness • • Links with art, architecture, product design and engineering	
Ratios and fractions	• Explore differences between direct and inverse proportion • Compare quantities using a ratio • Combine a set of ratios • Link ratio and algebra • Solve mixed ratio problems •	• Investigate ways of representing proportion in situation • Solve problems involving proportion • Solve best buy problems • Solve problems with currency conversion	• Use of proportion in context of real-life scenarios such as the link between staff numbers and time taken to serve customers	• Investigate proportional graphs and links with modelling	• 4SR4 • 4SR5	• Formal assessment including prior knowledge	• Explore proportions in recipes, construction and populations	
Percentages and interest	• Solve problems involving repeated percentage change • Solve problems involving exponential growth and decay • Increase or decrease by a given percentage	• Solve problems involving repeated percentage change • Solve problems involving exponential growth and decay	• Uses of Recurring decimals in context of real-life scenarios such as accuracy in speed/time measurements in sports	• Exponential growth of Coronavirus pandemic and “R rate”	• 4SA16	• Review of prior learning • Formative assessment • Low stakes end of unit test	• Links with Science and Textiles	
Probability	• Understand and use the product rule for counting • Use Venn diagrams to represent probability situations • Use two-way tables to represent probability situations •	• Solve probability problems involving combined events • •	• Uses of displaying data 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 •	• Probability of success in fairground rides/games •	• 4SN1 • 4SP4 • 4SP3	• Review of prior learning • Formative assessment •	• Links with data and tables from Geography	
Sequences	• Explore quadratic sequences • Investigate geometric progression	• Identify the nth term of a quadratic sequence	• Use of patterns in context of real-life scenarios such as the patterns in Human DNA and nature •	• Explore links between patterns in nature and their mathematical sequence	• Explore links between patterns in nature and their mathematical sequence	• Review of prior learning • Formative assessment • •	• Links with Science and Textiles • •	
Angles and bearings	• Draw and interpret scale diagrams • Understand and represent, measure and read bearings • Calculate bearings using angle rules	• Solve bearing problems using trigonometry and Pythagoras Theorem	• Use of trigonometry in context of real-life scenarios such as routes of boats/planes or angles of elevation/depression	• Practical uses of Trigonometry in context of carpentry or architecture	• 3SG13 • 4SG10	• Review of prior learning • Formative assessment • Low stakes end of unit test	• Links with architecture and civil engineering	

Collecting, representing and interpreting data	• Construct and interpret cumulative frequency graphs • Construct and interpret box plots • Interpret histograms • Find and interpret average from a table, a list	• Analyse distributions of data sets	• Uses of Box plots in context of real-life scenarios to compare performance of students/sports teams	• Analysing data and trends to draw conclusions based on mathematical evidence	• 4SS3 • 4SS4a • 4SS4b	• Review of prior learning • Formative assessment • Low stakes end of unit test	• Links with Geography and Science	
Enlargement and similarity	• Explore enlargement of 2D shapes • Solve mixed problems involving similar shapes • Estimate with powers and roots • Calculate with powers and roots	• Investigate the transformation of 2D shapes • Explore the impact of rounding	• 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 • Use of powers and roots in context of real-life scenarios such as carpentry or mass production	• Movement/Translation of shapes/images in earlier and simpler computer games/animation • • Impact of rounding errors in accuracy of dimensions in carpentry, area for flooring in rooms, turf for gardening	• 4SN2 • 4SN3 • 4SN8	• Review of prior learning • Formative assessment • Low stakes end of unit test	• Explore history and development of algebra and numerical representation in various civilisations	