NSW Syllabus Content Map

Education Perfect Maths is an online learning resources with scaffolded smart lessons aligned to the NSW Syllabus. This table aligns the lessons provided by Education Perfect to the NSW Syllabus.

Stage 5.3 NSW Syllabus	
Standard	**Education Perfect Lessons**
Number and Algebra	
Ratios and Rates (MA5.3-4NA) Draws, interprets and analyses graphs of physical phenomena.	
Solve problems involving direct proportion; explore the relationship between graphs and equations corresponding to simple rate problems (ACMNA208)	Direct Proportion Introduction to Inverse Proportion Applying Inverse Proportion Introduction to Graphs Analysing Graphs Constant Rates Variable Rates Rates of Change Analysing Rates of Change Revision: Rates
Algebraic Techniques (MA5.3-5NA) Selects and applies appropriate algebraic techniques to operate with algebraic expressions.	
Add and subtract algebraic fractions with numerical denominators, including those with binomial numerators	Adding Algebraic Fractions Subtracting Algebraic Fractions
Expand binomial products using a variety of strategies (ACMNA233)	Expanding Binomial Products Revision: Expanding
Factorise monic and non-monic quadratic expressions (ACMNA269)	Factorisation by Grouping Factorising Quadratic Trinomials Factorising Perfect Squares Factorising Differences of Two Squares Factorising by Completing the Square Revision: Factorising
Surds and Indices (MA5.3-6NA) Performs operations with surds and indices.	
Define rational and irrational numbers and perform operations with surds and fractional indices (ACMNA264)	
Equations (MA5.3-7NA) Solves complex linear, quadratic, simple cubic and simultaneous equations, and rearranges literal equations.	
Solve complex linear equations involving algebraic fractions	

Solve a wide range of quadratic equations derived from a variety of contexts (ACMNA269)	
Solve simple cubic equations	
Rearrange literal equations	
Solve simultaneous equations, where one equation is non-linear, using algebraic and graphical techniques, including the use of digital technologies	
Linear Relationships (MA5.3-8NA) Uses formulas to find midpoint, gradient and distance on the Cartesian plane, and applies standard forms of the equation of a straight line.	
Find the midpoint and gradient of a line segment (interval) on the Cartesian plane (ACMNA294)	Gradient of a Line Segment Midpoint of a Line Segment Applications of Coordinate Geometry: Gradient Applications of Coordinate Geometry: Midpoint
Find the distance between two points located on the Cartesian plane (ACMNA214)	Distance and Pythagoras' Theorem Applications of Coordinate Geometry: Distance
Sketch linear graphs using the coordinates of two points (ACMNA215)	Line Segments on Cartesian Planes Plotting Linear Graphs Drawing Linear Graphs Using the Gradient Graphing Using Technology - Casio Calculators Linear Patterns and Rules Determining Linear Rules Horizontal and Vertical Lines Revision: Linear Graphs
Solve problems using various standard forms of the equation of a straight line	Word Problems Rearranging and Solving Equations Solving Word Problems Revision: Linear Equations
Solve problems involving parallel and perpendicular lines (ACMNA238)	Parallel Lines Perpendicular Lines
Non-Linear Relationships (MA5.3-9NA) Sketches and interprets a variety of non-linear relationships.	
Describe, interpret and sketch parabolas, hyperbolas, circles and exponential functions and their transformations (ACMNA267)	Transforming Parabolas - Translation Transforming Parabolas - Dilation and Reflection Transforming Circles Exponential Graphs Applications of Non-Linear Graphs Revision: Non-Linear Graphs

Describe, interpret and sketch cubics, other curves and their transformations	
Polynomials (MA5.3-10NA) Recognises, describes and sketches polynomials, and applies the factor and remainder theorems to solve problems.	
Investigate the concept of a polynomial and apply the factor and remainder theorems to solve problems (ACMNA266)	
Apply an understanding of polynomials to sketch a range of curves and describe the features of these curves from their equation (ACMNA268)	
Logarithms (MA5.3-11NA) Uses the definition of a logarithm to establish and apply the laws of logarithms.	
Use the definition of a logarithm to establish and apply the laws of logarithms (ACMNA265)	
Solve simple exponential equations (ACMNA270)	
Functions and Other Graphs (MA5.3-12NA) Uses function notation to describe and sketch functions.	
Describe, interpret and sketch functions	
Measurement and Geometry	
Area and Surface Area (MA5.3-13MG) Applies formulas to find the surface areas of right pyramids, right cones, spheres and related composite solids.	
Solve problems involving the surface areas of right pyramids, right cones, spheres and related composite solids (ACMMG271)	
Volume (MA5.3-14MG) Applies formulas to find the volumes of right pyramids, right cones, spheres and related composite solids.	
Solve problems involving the volumes of right pyramids, right cones, spheres and related composite solids (ACMMG271)	
Trigonometry and Pythagoras' Theorem (MA5.3-15MG) Applies Pythagoras' theorem, trigonometric relationships, the sine rule, the cosine rule and the area rule to solve problems, including problems involving three dimensions.	
Apply Pythagoras' theorem and trigonometry to solve three-dimensional problems in right-angled triangles (ACMMG276)	
Use the unit circle to define trigonometric functions, and graph them, with and without the use of digital technologies (ACMMG274)	
Solve simple trigonometric equations (ACMMG275)	

Establish the sine, cosine and area rules for any triangle and solve related problems (ACMMG273)	
Properties of Geometrical Figures (MA5.3-16MG) Proves triangles are similar, and uses formal geometric reasoning to establish properties of triangles and quadrilaterals.	
Formulate proofs involving congruent triangles and angle properties (ACMMG243)	
Apply logical reasoning, including the use of congruence and similarity, to proofs and numerical exercises involving plane shapes (ACMMG244)	
Circle Geometry (MA5.3-17MG) Applies deductive reasoning to prove circle theorems and to solve related problems.	
Prove and apply angle and chord properties of circles (ACMMG272)	
Prove and apply tangent and secant properties of circles	
Statistics and Probability	
Single Variable Data Analysis (MA5.3-18SP) Uses standard deviation to analyse data.	
Calculate and interpret the mean and standard deviation of data and use these to compare data sets (ACMSP278)	
Bivariate Data Analysis (MA5.3-19SP) investigates the relationship between numerical variables using lines of best fit, and explores how data is used to inform decision-making processes.	
Use information technologies to investigate bivariate numerical data sets; where appropriate, students use a straight line to describe the relationship, allowing for variation (ACMSP279)	
Investigate reports of studies in digital media and elsewhere for information on their planning and implementation (ACMSP277)	