EducationPerfect

Maths - NSW Stage 5.1 Syllabus

Education Perfect Maths is a comprehensive online learning and assessment resource. Designed by teachers and written by our in-house team of maths experts, our content aligns to the NSW Syllabus and covers key mathematical concepts and key skills. It includes a variety of vibrant and engaging curriculum informed content that is tailored to suit your schools' Maths programme from upper primary through to senior secondary. Content features handwriting recognition software and line by line marking designed to give students accurate and informative feedback on their answers. Students are provided with contextual, competitive activities designed to positively impact motivation and learning outcomes. Students are engaged in multiple learning events, including our Education Perfect Maths Championships and other maths themed events throughout the year. Further, our comprehensive assessment platform provides a range of assessment opportunities, including flexible formative assessments, pre and post testing, summative assessment options, as well as NAPLAN practice tests.

This table connects the content provided by Education Perfect to the NSW Syllabus..

Number and Algebra	
Financial Mathematics (MA5.1-4NA) Solves financial problems involving earning, spending and investing money	
Education Perfect Lessons	**Curriculum Point**

Income and Tax:
    Income
    Tax
	Solve problems involving earning money

Simple Interest:
    Interest Theory
    Calculating Simple Interest
    Simple Interest: Real World Applications
	Solve problems involving simple interest (ACMNA211)

Compound Interest:
    Compound Interest Basic Formula
    Compound Interest - Months and Weeks
	Connect the compound interest formula to repeated applications of simple interest using appropriate digital technologies (ACMNA229)

Indices (MA5.15NA)	
Operates with algebraic expressions involving positive-integer and zero indices, and establishes the meaning of negative indices for numerical bases.	

Education Perfect Lessons	**Curriculum Point**

Index Laws with Variables:
    The Zero Index
    Powers as the Base of Another Power
    Multiplication as the Base of a Power
    Division as the Base of a Power
	Extend and apply the index laws to variables, using positive-integer indices and the zero index (ACMNA212)

Index Laws with Variables:
    Multiplying Powers
    Dividing Powers
Algebraic Products and Quotients:
    Simplifying Algebraic Products with Index Laws
    Simplifying Algebraic Quotients with Index Laws
	Simplify algebraic products and quotients using index laws (ACMNA231)

Integer Indices:
    Integer Indices
    Applying Index Laws
    Fractional Indices
	Apply index laws to numerical expressions with integer indices (ACMNA209)

Linear Relationships (MA5.16NA)	
Determines the midpoint, gradient and length of an interval, and graphs linear relationships.	

Education Perfect Lessons	**Curriculum Point**

Coordinate Geometry:
    Line Segments on Cartesian Planes
    Gradient of a Line Segment
    Midpoint of a Line Segment
    Applications of Coordinate Geometry: Gradient
    Applications of Coordinate Geometry: Midpoint
	Find the midpoint and gradient of a line segment (interval) on the Cartesian plane using a range of strategies, including graphing software (ACMNA294)

Coordinate Geometry:
    Distance and Pythagoras' Theorem
    Applications of Coordinate Geometry: Distance
	Find the distance between two points located on the Cartesian plane using a range of strategies, including graphing software (ACMNA214)

Linear Graphs
    Plotting Linear Graphs
    Drawing Linear Graphs using the Gradient
    Graphing using Technology - Casio Calculators
	Sketch linear graphs using the coordinates of two points (ACMNA215)

Parallel and Perpendicular Lines
    Parallel Lines
    Perpendicular Lines
	Solve problems involving parallel lines (ACMNA238)

Non-Linear Relationships (MA5.17NA)	
Graphs simple non-linear relationships.	
Education Perfect Lessons	**Curriculum Point**
Parabolas Circles Exponential Graphs	Graph simple non-linear relations, with and without the use of digital technologies (ACMNA296)
Transforming Parabolas Transforming Parabolas - Translation Transforming Parabolas - Dilation and Reflection Circles Transforming Circles Exponential Graphs Linear and Non-Linear Relationships	Explore the connection between algebraic and graphical representations of relations such as simple quadratics, circles and exponentials using digital technologies as appropriate (ACMNA239)

Measurement and Geometry

Area and Surface Area (MA5.18MG)	
Calculates the areas of composite shapes, and the surface areas of rectangular and triangular prisms.	
Education Perfect Lessons	**Curriculum Point**
Area: Area of Composite Shapes	Calculate the areas of composite shapes (ACMMG216)
Surface Area: Surface Area of Prisms	Solve problems involving the surface areas of right prisms (ACMMG218)
Numbers of Any Magnitude (MA5.19MG)	
interprets very small and very large units of measurement, uses scientific notation, and rounds to significant figures.	
Education Perfect Lessons	**Curriculum Point**
Time Scales	Investigate very small and very large time scales and intervals (ACMMG219)
Scientific Notation Using Scientific Notation	Express numbers in scientific notation (ACMNA210)
Right-Angled Triangles (Trigonometry) (MA5.110MG)	
Applies trigonometry, given diagrams, to solve problems, including problems involving angles of elevation and depression.	
Education Perfect Lessons	**Curriculum Point**
Content Not Yet Built.	Use similarity to investigate the constancy of the sine, cosine and tangent ratios for a given angle in right-angled triangles (ACMMG223)

Trigonometry:
     Introduction to Trigonometry
     Calculating Unknown Sides Using Sine
     Calculating Unknown Sides Using Cosine
     Calculating Unknown Sides Using Tangent
     Inverse Trigonometric Functions
Extension:
     Using Trigonometric Functions in Real World Applications
     Using Inverse Trigonometric Functions in Real World
     Applications
	Apply trigonometry to solve right-angled triangle problems (ACMMG224)

Trigonometry: Elevation and Depression	Solve right-angled triangle problems, including those involving angles of elevation and depression (ACMMG245)

Properties of Geometrical Figures (MA5.111MG)
Describes and applies the properties of similar figures and scale drawings.

Education Perfect Lessons	Curriculum Point

Similarity:
     The Enlargement Transformation
     Introduction to Similarity
	Use the enlargement transformation to explain similarity (ACMMG220)

Scaling:
     Introduction to Scaling
     Magnitude
     Magnitude as a Ratio
     Scaling on Cartesian Planes
	Solve problems using ratio and scale factors in similar figures (ACMMG221)

Statistics and Probability

Single Variable Data Analysis (MA5.112SP)
Uses statistical displays to compare sets of data, and evaluates statistical claims made in the media.

Education Perfect Lessons	Curriculum Point

Data Sources:
     Primary and Secondary Data
     Types of Data
	Identify everyday questions and issues involving at least one numerical and at least one categorical variable, and collect data directly from secondary sources (ACMSP228)

Shape and Spread in Data:
     Shape and Mode
     Symmetry and Skew in Data
     Histograms
     Frequency Polygons
Comparing Data:
     Back-to-Back Stem and Leaf Plots
	Construct back-to- back stem-and- leaf plots and histograms and describe data, using terms including 'skewed', 'symmetric' and 'bi-modal' (ACMSP282)

Shape and Spread in Data:
    Effect of Shape on Mean and Median
    Measures of Centre in Grouped Data
Comparing Data:
    Comparing Data Sets
    Comparing Dot Plots
    Comparing Histograms
	Compare data displays using mean, median and range to describe and interpret numerical data sets in terms of location (centre) and spread (ACMSP283)

Statistical Reports:
    Evaluating Statistical Graphs: Making our Graph
    Evaluating Statistical Graphs: the Shape of the Graph
    Evaluating Statistical Graphs: Data Collection
    Evaluating Statistical Graphs: Data Reporting
	Evaluate statistical reports in the media and other places by linking claims to displays, statistics and representative data (ACMSP253)

Probability (MA5.113SP)
Calculates relative frequencies to estimate probabilities of simple and compound events.

Education Perfect Lessons	Curriculum Point

Venn Diagrams and Two-Way Tables:
    Venn Diagrams
    Using Venn Diagrams
    Two-Way Tables
    Using Two-Way Tables
    Advanced Venn Diagrams and Two-Way Tables
Experimental Probability:
    Relative Frequencies
    Using Relative Frequencies
	Calculate relative frequencies from given or collected data to estimate probabilities of events involving 'and' or 'or' (ACMSP226)