AC v9.0 EP Curriculum Map
Y5-10 Maths

Year 5

Number

Content Descriptor/s	EP Lessons in *1. Number and Place Value*	
AC9M5N01 interpret, compare and order numbers with more than 2 decimal places, including numbers greater than one, using place value understanding; represent these on a number line AC9M5N02 express natural numbers as products of their factors, recognise multiples and determine if one number is divisible by another AC9M5N06 solve problems involving multiplication of larger numbers by one- or two-digit numbers, choosing efficient calculation strategies and using digital tools where appropriate; check the reasonableness of answers AC9M5N07 solve problems involving division, choosing efficient strategies and using digital tools where appropriate; interpret any remainder according to the context and express results as a whole number, decimal or fraction AC9M5N08 check and explain the reasonableness of solutions to problems including financial contexts using estimation strategies appropriate to the context	*1. Prior Learning* • What is a Number? • Counting • Place Values • Numbers in Written Form • Expanding Numbers • Odd and Even Numbers • Multi Digit Odd and Even Numbers • Addition • Subtraction • The Subtraction Algorithm • Multiplication • Area Models *3. Number Lines* • Number Lines • Subtracting with Number Lines *2. Factors and Multiples* • Multiplication Using Place Value • Multiplying Big Numbers • Multiples • Applications of Multiples • Division in Parts • Factors • Identifying Factors	*3. Rounding and Estimation* • Introduction to Rounding • Leading Digit Approximation *4. Further Resources* Spelling and Definitions • Definitions List: Number and Place Value • Definitions MCQ: Number and Place Value • Spelling List: Number and Place Value Topic Tests • Y5 Number and Place Value • Y5 Number and Place Value

Content Descriptor/s	EP Lessons in *2. Fractions and Decimals*	
AC9M3N02 recognise and represent unit fractions and their multiples in different ways; combine fractions with the same denominator to complete the whole AC9M5N03 compare and order fractions with the same and related denominators including mixed numerals, applying knowledge of factors and multiples; represent these fractions on a number line AC9M5N05 solve problems involving addition and subtraction of fractions with the same or related denominators, using different strategies AC9M5N08 check and explain the reasonableness of solutions to problems including financial contexts using estimation strategies appropriate to the context	*1. Prior Learning* • Half • Quarters and Eighths • Using Fractions *2. Fractions* • Fractions • Adding Mixed Numbers with the Same Denominator • Subtracting Fractions from One Whole • Subtracting Fractions from Whole Numbers • Fraction Word Problems • Unit Fractions • Fractions on a Number Line • Proper and Improper Fractions • Mixed Numbers • Converting Mixed Numbers • Adding Fractions with the Same Denominator • Subtracting Fractions with the Same Denominator • Adding Whole Numbers and Fractions *3. Decimals* • Introduction to Decimals • Tenths • Hundredths • Thousandths and Beyond • Comparing Decimals • Rounding Decimal Numbers	*4. Online Worksheets* • Unit Fractions Practice • Adding Mixed Numbers with the Same Denominator Practice • Adding Whole Numbers and Fractions Practice • Fraction Word Problems Practice • Subtracting Fractions from One Whole Practice • Subtracting Fractions from Whole Numbers Practice • Subtracting Fractions with the Same Denominator Practice • Comparing Decimals Practice • Introduction to Decimals Practice • Hundredths Practice • Thousandths and Beyond Practice • Tenths Practice • Converting Mixed Numbers Practice • Fractions on a Number Line Practice • Fractions Practice • Mixed Numbers Practice • Proper and Improper Fractions Practice • Adding Fractions with the Same Denominator Practice *5. Further Resources* • Spelling and Definitions • Definitions List: Fractions and Decimals • Definitions MCQ: Fractions and Decimals • Spelling List: Fractions and Decimals Topic Tests • Decimals • Fractions

Content Descriptor/s	EP Lessons in *3. Financial Contexts*	
AC9M5N09 use mathematical modelling to solve practical problems involving additive and multiplicative situations including financial contexts; formulate the problems, choosing operations and efficient calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation	*1. Prior Learning* • Australian Money • International Money • Converting Between Dollars and Cents • Count the Change • Calculating Change • Shopping *2. Financial Mathematics* • Introduction to Budgets • Making a Budget • GST *3. Online Worksheets* • Budgeting Practice • Making a Budget Practice • GST Practice	*4. Further Resources* Spelling and Definitions • Definitions List: Money and Financial Mathematics • Definitions MCQ: Money and Financial Mathematics • Spelling List: Money and Financial Mathematics Topic Tests • Money and Financial Mathematics

Algebra

Content Descriptor/s	EP Lessons in *2. Algebra*	
AC9M5N10 create and use algorithms involving a sequence of steps and decisions and digital tools to experiment with factors, multiples and divisibility; identify, interpret and describe emerging patterns	*1. Prior Learning* • Number Lines • Addition • Subtraction • Skip Counting Up • Skip Counting Down • Number Patterns • Patterns with Objects *2. Number Patterns* • Number Patterns • Identifying Patterns • Describing Patterns • Missing Pieces of Patterns • Continuing Patterns • Gaps in Number Sentences • Equivalent Number Sentences	*3. Online Worksheets* • Identifying Patterns Practice • Describing Patterns Practice • Missing Pieces of Patterns Practice • Continuing Patterns Practice • Gaps in Number Sentences Practice • Equivalent Number Sentences Practice *4. Further Resources* Maths in Context • Patterns Found in Nature (Year 5-10) Spelling and Definitions • Definitions List: Patterns and Algebra • Definitions MCQ: Patterns and Algebra • Spelling List: Patterns and Algebra Topic Tests • Patterns

Measurement

Content Descriptor/s	EP Lessons in *1. Measurement*	
AC9M5M01 choose appropriate metric units when measuring the length, mass and capacity of objects; use smaller units or a combination of units to obtain a more accurate measure AC9M5M02 solve practical problems involving the perimeter and area of regular and irregular shapes using appropriate metric units	*1. Prior Learning* • Rectangles • Triangles • The Metric System • Units of Measurement • Comparing Lengths and Objects • Area • Area Models for Multiplication *2. Units of Measurement* • Units of Measurement • Unit Prefixes • Units of Length • Units of Area • Hectares • The Metric System • Net Mass and Gross Mass • Estimating Measurements *3. Perimeter and Area* • Introduction to Perimeter • Perimeter • Calculating Perimeters • Calculating the Perimeter of a Shape with an Unknown Side • Perimeter of Composite Shapes • Finding the Unknown Side of a Composite Shape • Area of Rectangles	*4. Online Worksheets* • Units of Measurement Practice • Unit Prefixes Practice • Units of Length Practice • Net Mass and Gross Mass Practice • Perimeter Practice • Finding Perimeter Practice • Calculating Perimeter Practice • Perimeter of Composite Shapes Practice • Area Practice • Area of Rectangles Practice • Hectare Practice *5. Further Resources* Spelling and Definitions • Definitions List: Units of Measurement • Definitions MCQ: Using Units of Measurement • Spelling List: Using Units of Measurement Topic Tests • Units of Measurement • Perimeter

Content Descriptor/s	EP Lessons in *2. Time*	
AC9M5M03 compare 12- and 24-hour time systems and solve practical problems involving the conversion between them	*1. Prior Learning* • Days, Months, Seasons • Language of Time • Splitting Up Time *2. Time* • Duration • Recording Time • Introduction to Analog Clocks • Reading Analog Clocks • Digital Clocks Practice • 24-Hour Time Practice • Converting 12- and 24-Hour Time Practice	• 12-Hour Time • 24-Hour Time • Converting 12- and 24-Hour Time *3. Online Worksheets* • Duration Practice • Recording Time Practice • Reading Analog Clocks Basics Practice • Analog Clocks to the Nearest Minute Practice *4. Further Resources* Spelling and Definitions • Definitions List: Time • Definitions MCQ: Time • Spelling List: Time Topic Tests • Clocks
Content Descriptor/s	**EP Lessons in *3. Angles***	
AC9M5M04 estimate, construct and measure angles in degrees, using appropriate tools including a protractor, and relate these measures to angle names	*1. Prior Learning* • Angles: Amount of Turn *2. Angles* • Angles • Angles in the Real World • Right Angles • Types of Angles • Other Common Angles • Estimating the Size of Angles • Measuring Acute and Obtuse Angles • Measuring Reflex Angles *3. Online Worksheets* • Angles Practice • Angles in the Real World Practice	• Properties of Right Angles Practice • Types of Angles Practice • Other Common Angles Practice • Estimating the Size of Angles Practice • Measuring Acute and Obtuse Angles Practice • Measuring Reflex Angles Practice *4. Further Resources* Spelling and Definitions • Definitions List: Geometric Reasoning • Definitions MCQ: Geometric Reasoning • Spelling List: Geometric Reasoning Topic Tests • Y5 Angles

Space

Content Descriptor/s	EP Lessons in *1. Shapes and Solids*	
AC9M5SP01 connect objects to their nets and build objects from their nets using spatial and geometric reasoning	*1. Prior Learning* • Rectangles • Triangles • Comparing Shapes *2. Shapes* • 2D Shapes • Identifying Polygons • Irregular Polygons • Composite Shapes *3. Solids* • 3D Solids • Constructing 3D Objects • Identifying Faces of Prisms and Pyramids • Nets of Prisms • Nets of Pyramids • Activity: Making Objects Using Nets	*4. Online Worksheets* • 2D Shapes Practice • Regular Polygons Practice • Irregular Polygons Practice • Composite Shapes Practice • 3D Solids Practice • Identifying Faces of Prisms and Pyramids Practice • Nets of Prisms Practice • Nets of Pyramids Practice *5. Further Resources* Spelling and Definitions • Definitions List: Shape • Definitions MCQ: Shape • Spelling List: Shape Topic Tests • Y5 2D Shape • Y5 3D Shape
Content Descriptor/s	**EP Lessons in *2. Transformations***	
AC9M5SP03 describe and perform translations, reflections and rotations of shapes, using dynamic geometric software where appropriate; recognise what changes and what remains the same, and identify any symmetries	*1. Prior Learning* • Directional Language • Describing Locations • Giving and Following Directions • Transforming Shapes • Locations • Describing Routes Using Landmarks • Using Compasses and Scales	*2. Transformations* • Line Symmetry • Line Symmetry in Life • Identifying Rotational Symmetry • Rotational Symmetry in Life • Order of Rotational Symmetry • Rotation on a Grid • Reflection on a Grid • The Enlargement Transformation • Translation on a Grid ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *2. Transformations (continued from previous page)*	
	3. Online Worksheets • Locations Practice • Reflection on a Grid Practice • The Enlargement Transformation Practice • Translation on a Grid Practice • Describing Routes Practice • Describing Routes Using Landmarks Practice • Line Symmetry Practice • Line Symmetry in Life Practice • Identifying Rotational Symmetry Practice • Rotational Symmetry in Life Practice • Order of Rotational Symmetry Practice • Rotation on a Grid Practice	*4. Further Resources* Maths in Context • Map Projections: A Matter of Perspective (Year 5-10) Spelling and Definitions • Definitions List: Location and Transformation • Definitions MCQ: Location and Transformation • Spelling List: Location and Transformation Topic Tests • Y5 Location • Y5 Transformation

Probability

Content Descriptor/s	EP Lessons in *5. Probability*	
AC9M5P01 list the possible outcomes of chance experiments involving equally likely outcomes and compare to those which are not equally likely AC9M5P02 conduct repeated chance experiments including those with and without equally likely outcomes, observe and record the results ; use frequency to compare outcomes and estimate their likelihoods	*1. Prior Learning* • What are Events? • How Likely? • Impossible and Certain Events • Differences in Results *2. Chance* • The Likelihood Scale • Likelihood of Events • Equal and Unequal Outcomes • The Probability of Outcomes • Chance Games	*3. Online Worksheets* • The Likelihood Scale Practice • Likelihood of Events Practice • Equal and Unequal Outcomes Practice • The Probability of Outcomes Practice • Chance Games Practice 4. Further Resources Maths in Context • Unfortunate Events (Year 5-10) • Chance Games from Other Cultures Spelling and Definitions • Definitions List: Chance • Definitions MCQ: Chance • Spelling List: Chance *Topic Tests* • Chance

Statistics

Content Descriptor/s	EP Lessons in *6. Statistics*	
AC9M5ST01 acquire, validate and represent data for nominal and ordinal categorical and discrete numerical variables to address a question of interest or purpose using software including spreadsheets; discuss and report on data distributions in terms of highest frequency (mode) and shape, in the context of the data AC9M5ST03 plan and conduct statistical investigations by posing questions or identifying a problem and collecting relevant data; choose appropriate displays and interpret the data; communicate findings within the context of the investigation	*1. Prior Learning* • Collecting Data • Questions and Answers • What is a Number? *2. Collecting Data* • What is Data? • Questions and Answers • Collecting Data • Surveys *3. Data Displays* • Tally Marks • Data Tables • Picture Graphs • Picture Graphs and Frequency Tables • Picture Graphs with Keys • Dot Plots • Dot Plots and Frequency Tables • Column (Bar) Graphs • Reading Column Graphs • Reading from Data Displays • Comparing Graphs	*4. Online Worksheets* • What is Data: Practice • Dot Plots and Tables Practice • Column (Bar) Graphs Practice • Reading Column Graphs Practice • Comparing Graphs Practice • Collecting Data Practice • Surveys Practice • Tally Marks Practice • Data Tables Practice • Picture Graphs Practice • Picture Graphs and Data Tables Practice • Picture Graphs with Keys Practice • Dot Plots Practice *5. Further Resources* Spelling and Definitions • Definitions List: Data Representation and Interpretation • Definitions MCQ: Data Representation and Interpretation • Spelling List: Data Representation and Interpretation Topic Tests • Y5 Data Representation and Interpretation

Year 05 Pre-Tests and Post-Tests

Content Descriptor/s	EP Lessons	
	1. Pre-Tests • Year 05 Number Pre-Test • Year 05 Algebra Pre-Test • Year 05 Measurement Pre-Test • Year 05 Geometry Pre-Test • Year 05 Chance Pre-Test • Year 05 Data Pre-Test	*2. Post-Tests* • Year 05 Number Post-Test • Year 05 Algebra Post-Test • Year 05 Measurement Post-Test • Year 05 Geometry Post-Test • Year 05 Chance Post-Test • Year 05 Data Post-Test

Year 6

Number

Content Descriptor/s	EP Lessons in *1. Number and Place Value*	
AC9M6N01 recognise situations, including financial contexts, that use integers; locate and represent integers on a number line and as coordinates on the Cartesian plane AC9M6N02 identify and describe the properties of prime, composite and square numbers and use these properties to solve problems and simplify calculations	*1. Prior Learning* • What is a Number? • Number Lines • Counting • Odd and Even Numbers • Multi Digit Odd and Even Numbers • Place Values • Expanding Numbers • Subtracting with Number Lines • Numbers in Written Form • Addition • Subtraction • Applying Addition and Subtraction • Column Multiplication • Multiplication Using Rounding and Compensation • Long Division • Applying Multiplication and Division *2. Integers* • Positive Integers • Ordering Positive Integers • Negative Integers • Introduction to Negative Numbers • Negative Numbers on the Number Line • Ordering Negative Integers	*4. Properties of Numbers* • Prime Numbers • Composite Numbers • Factor Trees • Square Numbers • Calculating Square Numbers *5. Online Worksheets* • Positive Integers Practice • Ordering Positive Integers Practice • Negative Integers Practice • Ordering Negative Integers Practice • Addition Practice • Subtraction Practice • Applying Addition and Subtraction Practice • Column Multiplication Practice • Multiplication Using Rounding and Compensation Practice • Long Division Practice • Applying Multiplication and Division Practice • Prime Numbers Practice • Composite Numbers Practice • Factor Trees Practice • Square Numbers Practice • Calculating Square Numbers Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	**EP Lessons in *1. Number and Place Value (continued from previous page)***	
	6. Further Resources Spelling and Definitions • Definitions List: Number and Place Value • Definitions MCQ: Number and Place Value • Spelling List: Number and Place Value	Topic Tests • Arithmetic Laws • Y6 Number and Place Value
Content Descriptor/s	**EP Lessons in *2. Fractions, Decimals and Percentages***	
AC9M6N03 apply knowledge of equivalence to compare, order and represent common fractions including halves, thirds and quarters on the same number line and justify their order AC9M6N04 apply knowledge of place value to add and subtract decimals, using digital tools where appropriate; use estimation and rounding to check the reasonableness of answers AC9M6N05 solve problems involving addition and subtraction of fractions using knowledge of equivalent fractions AC9M6N06 multiply and divide decimals by multiples of powers of 10 without a calculator, applying knowledge of place value and proficiency with multiplication facts; using estimation and rounding to check the reasonableness of answers AC9M6N07 solve problems that require finding a familiar fraction, decimal or percentage of a quantity, including percentage discounts, choosing efficient calculation strategies and using digital tools where appropriate AC9M6N08 approximate numerical solutions to problems involving rational numbers and percentages, including financial contexts, using appropriate estimation strategies	*1. Prior Learning* • Half • Quarters and Eighths • Using Fractions *2. Fraction Basics* • Introduction to Fractions • Proper Fractions • Improper Fractions • Mixed Numbers • Fractions and Number Lines • Equivalent Fractions • Comparing Fractions • Simplifying Fractions • Fraction of a Quantity *3. Adding and Subtracting Fractions* • Adding Fractions with the Same Denominator • Subtracting Fractions with the Same Denominator • Adding Mixed Numbers with the Same Denominator • Subtracting Mixed Numbers with the Same Denominator	• Adding Fractions with Related Denominators • Subtracting Fractions with Related Denominators *4. Decimal Basics* • Decimal Place Values • Comparing Decimals *5. Adding and Subtracting Decimals* • Adding Decimals • Applications of Adding Decimals • Subtracting Decimals • Applications of Subtracting Decimals • Multiplying Decimals • Dividing Decimals by Whole Numbers *6. Percentage Basics* • Introduction to Percentages • Percentages of a Number *7. Converting between Fractions, Decimals and Percentages* • Percentages and Decimals • Percentages, Decimals and Fractions • Converting Percentages ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *2. Fractions, Decimals and Percentages (continued from previous page)*	
	8. Online Worksheets 1. Fraction Basics • Introduction to Fractions Practice • Proper Fractions Practice • Improper Fractions Practice • Mixed Numbers Practice • Fractions and Number Lines Practice • Equivalent Fractions Practice • Comparing Fractions Practice • Simplifying Fractions Practice • Fraction of a Quantity Practice 2. Adding and Subtracting Fractions • Adding Fractions with the Same Denominator Practice • Subtracting Fractions with the Same Denominator Practice • Adding Mixed Numbers with the Same Denominator Practice • Subtracting Mixed Numbers with the Same Denominator Practice • Adding Fractions with Related Denominators Practice • Subtracting Fractions with Related Denominators Practice 3. Decimal Basics • Decimal Place Values Practice • Comparing Decimals Practice 4. Adding and Subtracting Decimals • Adding Decimals Practice • Applications of Adding Decimals Practice • Subtracting Decimals Practice • Applications of Subtracting Decimals Practice	5. Multiplying and Dividing Decimals • Multiplying Decimals Practice • Dividing Decimals Practice 6. Percentage Basics • Introduction to Percentages Practice • Percentages of a Number Practice 7. Converting between Fractions, Decimals, and Percentages • Converting Percentages Practice • Percentages and Decimals Practice • Percentages, Decimals and Fractions Practice *9. Further Resources* Spelling and Definitions • Definitions List: Fractions and Decimals • Definitions MCQ: Fractions and Decimals • Spelling List: Fractions and Decimals Topic Tests • Percentages • Y6 Decimals and Percentages • Y6 Fractions

Content Descriptor/s	EP Lessons in *3. Financial Contexts*	
AC9M6N07 solve problems that require finding a familiar fraction, decimal or percentage of a quantity, including percentage discounts, choosing efficient calculation strategies and using digital tools where appropriate	*1. Prior Learning* • Money • Count the Change • Shopping *2. Discounts* • Discounts • Calculating Discounts *3. Online Worksheets* • Discounts Practice • Calculating Discounts Practice	*4. Further Resources* Spelling and Definitions • Definitions List: Money and Financial Mathematics • Definitions MCQ: Money and Financial Mathematics • Spelling List: Money and Financial Mathematics Topic Tests • Discounts

Algebra

Content Descriptor/s	EP Lessons in *2. Algebra*	
AC9M6A01 recognise and use rules that generate visually growing patterns and number patterns involving rational numbers AC9M6A02 find unknown values in numerical equations involving brackets and combinations of arithmetic operations, using the properties of numbers and operations AC9M6A03 create and use algorithms involving a sequence of steps and decisions that use rules to generate sets of numbers; identify, interpret and explain emerging patterns	*1. Prior Learning* • Counting • Skip Counting Up • Skip Counting Down • Number Patterns • Patterns with Objects *2. Patterns* • Identifying Patterns • Describing Patterns • Continuing Patterns to Distant Terms *3. Order of Operations* • Order of Operations • Preserving Order of Operations *4. Online Worksheets* 1. Patterns • Identifying Relationships Practice • Continuing Patterns Practice • Rules for Patterns Practice	2. Order of Operations • Order of Operations Practice • Preserving Order of Operations Practice *5. Further Resources* Maths in Context • Patterns Found in Nature (Year 5-10) Spelling and Definitions • Definitions List: Patterns and Algebra • Definitions MCQ: Patterns and Algebra • Spelling List: Patterns and Algebra Topic Tests • Y6 Patterns and Algebra

Measurement

Content Descriptor/s	EP Lessons in *1. Measurement*	
AC9M6M01 convert between common metric units of length, mass and capacity; choose and use decimal representations of metric measurements relevant to the context of a problem	*1. Prior Learning* • Units of Measurement • Comparing Lengths and Objects • The Metric System • Area • Area Models for Multiplication *2. Length* • Units of Length • Method for Converting Units of Length • Converting Units of Length • Comparing Units of Length • Interpreting Units of Length *3. Mass* • Units of Mass • Converting Units of Mass • Applications of Converting Units of Mass • Interpreting Units of Mass *4. Capacity and Volume* • Capacity and Volume • Volume • Units of Capacity • Converting Units of Capacity • Applications of Converting Units of Capacity • Interpreting Units of Capacity *5. Online Worksheets* 1. Length • Units of Length Practice • Method of Converting Units of Length Practice • Converting Units of Length Practice • Comparing Units of Length Practice • Interpreting Units of Length Practice	2. Mass • Units of Mass Practice • Converting Units of Mass Practice • Applications of Converting Units of Mass Practice • Interpreting Units of Mass Practice 3. Capacity and Volume • Units of Capacity Practice • Converting Units of Capacity Practice • Applications of Converting Units of Capacity Practice • Interpreting Units of Capacity Practice • Capacity and Volume Practice • Units of Volume Practice *6. Further Resources* Spelling and Definitions • Definitions List: Units of Measurement • Definitions MCQ: Units of Measurement • Spelling List: Units of Measurement Topic Tests • Units of Measurement

Content Descriptor/s	**EP Lessons in *2. Time***	
AC9M6M03 interpret and use timetables and itineraries to plan activities and determine the duration of events and journeys	*1. Prior Learning* • Days, Months, Seasons • Language of Time • Splitting Up Time *2. Timetables* • Personal Timetables • Reading Timetables • Timetables and Transport • Using Multiple Timetables • Timelines *3. Online Worksheets* • Personal Timetables Practice • Reading Timetables Practice • Timetables and Transport Practice • Reading Multiple Timetables Practice • Timelines Practice	*4. Further Resources* Spelling and Definitions • Definitions List: Time • Definitions MCQ: Time • Spelling List: Time Topic Tests • Timetables and Timelines
Content Descriptor/s	**EP Lessons in *3. Angles***	
AC9M6M04 identify the relationships between angles on a straight line, angles at a point and vertically opposite angles; use these to determine unknown angles, communicating reasoning	*1. Prior Learning* • Angles: Amount of Turn *2. Angles* • Common Angles • Types of Angles • Measuring Angles • Angles on Straight Lines • Angles in Corners • Angles Around a Point • Vertically Opposite Angles	*3. Online Worksheets* • Common Angles Practice • Types of Angles Practice • Measuring Angles Practice • Angles on Straight Lines Practice • Angles in Corners Practice • Angles around a Point Practice • Vertically Opposite Angles Practice *4. Further Resources* Spelling and Definitions • Definitions List: Geometric Reasoning • Definitions MCQ: Geometric Reasoning • Spelling List: Geometric Reasoning Topic Tests • Y6 Geometric Reasoning

Space

Content Descriptor/s	EP Lessons in *1. Shape*	
AC9M6SP01 compare the parallel cross-sections of objects and recognise their relationships to right prisms	*1. Prior Learning* • Rectangles • Triangles • Comparing Shapes • Nets of Prisms • Nets of Pyramids • Nets of Prisms Practice • Nets of Pyramids Practice *2. Prisms* • Prisms • Drawing Prisms *3. Pyramids* • Pyramids • Drawing Pyramids *4. Online Worksheets* • Prisms Practice • Pyramids Practice • Pyramids in the Real World Practice *5. Further Resources* Hands-On Activities Geoboard Tetris • Geoboard Tetris • Geoboard Tetris Student Worksheet • Geoboard Tetris Teacher Guide • Paper Geoboard Tetris Student Worksheet • Printable Geoboard	Playdough Prisms • Playdough Prisms • Playdough Prisms Student Worksheet • Playdough Prisms Teacher Guide • Playdough Recipe Maths in Context • Pyramids in the Real World Spelling and Definitions • Definitions List: Shape • Definitions MCQ: Shape • Spelling List: Shape Topic Tests • Y6 Shape

Content Descriptor/s	EP Lessons in *2. Location and Transformation*	
AC9M6SP02 locate points in the 4 quadrants of a Cartesian plane; describe changes to the coordinates when a point is moved to a different position in the plane AC9M6SP03 recognise and use combinations of transformations to create tessellations and other geometric patterns, using dynamic geometric software where appropriate	*1. Prior Learning* • Describing Locations • Directional Language • Giving and Following Directions • Transforming Shapes • Translation on a Grid • Reflection on a Grid • Rotation on a Grid • The Enlargement Transformation *2. Locations* • Cartesian Planes • Describing Locations with Coordinates • Describing Locations with Cartesian Planes *3. Transformations* • Translation • Reflection • Rotation Introduction • Predicting Patterns *4. Tessellations* • Tessellations • Tessellations Student Worksheet • Tessellations Teacher Guide *4. Online Worksheets* 1. Locations • Cartesian Planes Practice • Describing Locations with Coordinates Practice • Describing Locations with Cartesian Planes Practice	2. Transformations • Translation Practice • Reflections Practice • Rotation Practice • Predicting Patterns Practice *5. Further Resources* Hands-On Activities Maths in Context • Map Projections: A Matter of Perspective (Year 5-10) • Rotation and Symmetry in Aboriginal Kinship Systems Spelling and Definitions • Definitions List: Location and Transformation • Definitions MCQ: Location and Transformation • Spelling List: Location and Transformation Topic Tests • Locations • Transformations

Probability

Content Descriptor/s	EP Lessons in *1. Probability*	
AC9M6P01 recognise that probabilities lie on numerical scales of 0 – 1 or 0% – 100% and use estimation to assign probabilities that events occur in a given context, using common fractions, percentages and decimals AC9M6P02 conduct repeated chance experiments and run simulations with an increasing number of trials using digital tools; compare observations with expected results and discuss the effect on variation of increasing the number of trials	*1. Prior Learning* • What are Events? • How Likely? • Impossible and Certain Events • Differences in Results • Percentages, Decimals and Fractions *2. Chance* • Writing Probabilities • Proportional Reasoning • Probability Experiments • Observed Outcomes vs. Expected Outcomes • Probability as a Fraction • Probability as a Fraction II • Probability as a Decimal and a Percentage *3. Online Worksheets* • Writing Probabilities Practice • Proportional Reasoning Practice • Probability Experiments Practice • Observed Outcomes vs. Expected Outcomes Practice • Probability as a Fraction Practice	*4. Further Resources* Maths in Context • Chance Games from Other Cultures • Unfortunate Events (Year 5-10) Spelling and Definitions • Definitions List: Chance • Definitions MCQ: Chance • Spelling List: Chance Topic Tests • Chance

Statistics

Content Descriptor/s	EP Lessons in *6. Statistics*	
AC9M6ST01 interpret and compare data sets for ordinal and nominal categorical, discrete and continuous numerical variables using comparative displays or visualisations and digital tools; compare distributions in terms of mode, range and shape AC9M6ST02 identify statistically informed arguments presented in traditional and digital media; discuss and critique methods, data representations and conclusions	*1. Prior Learning* • Collecting Data • Questions and Answers • Reading from Data Displays *2. Data Representation and Interpretation* • Picture Graphs • Misleading Data and Graphs • Picture Graphs with Keys • Dot Plots • Column (Bar) Graphs • Reading Column (Bar) Graphs • Side-by-Side Column Graphs • Pie Charts • Line Graphs • Two-Way Tables • Types of Data *2. Online Worksheets* • Picture Graphs Practice • Picture Graphs with Keys Practice • Dot Plots Practice	• Column (Bar) Graphs Practice • Reading Column (Bar) Graphs Practice • Side-by-Side Column Graphs Practice • Pie Charts Practice • Line Graphs Practice • Two-Way Tables Practice • Misleading Data and Graphs Practice *3. Further Resources* Spelling and Definitions • Definitions List: Data Representation and Interpretation • Definitions MCQ: Data Representation and Interpretation • Spelling List: Data Representation and Interpretation Topic Tests • Y6 Data Representation and Interpretation

Year 06 Pre-Tests and Post-Tests

Content Descriptor/s	EP Lessons	
	1. Pre-Tests • Year 06 Algebra Pre-Test • Year 06 Chance Pre-Test • Year 06 Data Pre-Test • Year 06 Geometry Pre-Test • Year 06 Measurement Pre-Test • Year 06 Number Pre-Test	*2. Post-Tests* • Year 06 Algebra Post-Test • Year 06 Chance Post-Test • Year 06 Data Post-Test • Year 06 Geometry Post-Test • Year 06 Measurement Post-Test • Year 06 Number Post-Test

Year 7

Number

Content Descriptor/s	EP Lessons in *1. Number*	
AC9M7N01 describe the relationship between perfect square numbers and square roots, and use squares of numbers and square roots of perfect square numbers to solve problems AC9M7N02 represent natural numbers as products of powers of prime numbers using exponent notation AC9M7N05 round decimals to a given accuracy appropriate to the context and use appropriate rounding and estimation to check the reasonableness of solutions AC9M7N06 use the 4 operations with positive rational numbers including fractions, decimals and percentages to solve problems using efficient calculation strategies AC9M7N07 compare, order and solve problems involving addition and subtraction of integers	*1. Prior Learning* • Addition • Subtraction • Applying Addition and Subtraction • Column Multiplication • Multiplication Using Rounding and Compensation • Long Division • Short Division - Without Remainders • Short Division - With Whole Number Remainders • Applying Multiplication and Division *2. Integers* • Positive Integers • Negative Integers • Comparing & Ordering Integers • Adding Negative Numbers • Subtracting Negative Numbers • Adding & Subtracting Integers *3. Factors and Multiples* • Multiples • Factors • Highest Common Factor • Lowest Common Multiple • Index Notation	*4. Prime Numbers and Prime Factors* • Prime & Composite Numbers • Factor Trees • Prime Factors and the HCF • Prime Factors and the LCM • Applying Prime Factors *5. Square Numbers and Square Roots* • Perfect Squares • Square Roots • Square Roots of Non-Perfect Squares *6. Rounding* • Rounding Sensibly • Consequences of Rounding • Rounding Based on Given Values *7. Online Worksheets* Arithmetic • Integers Practice • Comparing & Ordering Integers Practice • Adding & Subtracting Integers Practice • Integers Mixed Practice Factors and Multiples • Multiples Practice • Factors Practice • Factors & Multiples Practice • Factors & Multiples Mixed Practice • HCF & LCM Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	**EP Lessons in *1. Number (continued from previous page)***	
	Prime Numbers and Prime Factors • Prime & Composite Numbers Practice • Prime Factors Practice • Prime Numbers and Prime Factors Mixed Practice Square Numbers and Square Roots • Perfect Squares Practice • Square Roots Practice • Square Roots of Non-Perfect Squares Practice • Squares and Square Roots Mixed Practice *9. Further Resources* Hands-On Activities Ordering Integers Lotto • Ordering Integers Lotto • Ordering Integers Lotto Student PDF • Ordering Integers Lotto Teacher PDF	Place Value Codebreaking • Place Value Codebreaking • Place Value Codebreaking Student Worksheet • Place Value Codebreaking Teacher Guide Spelling and Definitions • Definitions List: Number and Place Value • Definitions MCQ: Number and Place Value • Spelling List: Number and Place Value Topic Tests • Arithmetic Laws
Content Descriptor/s	**EP Lessons in *2. Fractions, Decimals and Percentages***	
AC9M7N04 find equivalent representations of rational numbers and represent rational numbers on a number line AC9M7N05 round decimals to a given accuracy appropriate to the context and use appropriate rounding and estimation to check the reasonableness of solutions AC9M7N06 use the 4 operations with positive rational numbers including fractions, decimals and percentages to solve problems using efficient calculation strategies AC9M7N08 recognise, represent and solve problems involving ratios	*1. Prior Learning* 1. Fractions • Fractions • Fractions and Number Lines • Comparing Fractions • Equivalent Fractions • Simplifying Fractions • Adding Fractions with the Same Denominator • Subtracting Fractions with the Same Denominator • Adding Fractions with a Different Denominator • Subtracting Fractions with a Different Denominator	2. Decimals • Introduction to Decimals • Adding Decimals • Subtracting Decimals • Multiplying Decimals • Dividing Decimals • Rounding Decimals 3. Percentages • Percentages • Percentages and Decimals • Percentages and Fractions • Using Percentages ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *2. Fractions, Decimals and Percentages (continued from previous page)*	
	4. Decimals, Fractions and Percentages • Converting Between Fractions and Decimals • Converting Between Percentages and Fractions *2. Fractions* 1. Fraction Basics • Fraction Basics • Equivalent Fractions • Mixed Numbers • Fraction Walls • Fractions and Number Lines 2. Fractions Arithmetic • Adding Fractions with the Same Denominator • Subtracting Fractions with the Same Denominator • Adding Fractions with a Different Denominator • Subtracting Fractions with a Different Denominator • Adding Mixed Fractions with the Same Denominator • Subtracting Mixed Fractions with the Same Denominator • Subtracting Mixed Fractions with a Different Denominator • Multiplying Fractions Numerically • Multiplying Fractions Using Models • Dividing Fractions • Dividing Fractions by Simplifying	*3. Decimals* • How Decimals Work • Adding Decimals • Subtracting Decimals • Multiplying Decimals • Dividing Decimals • Rounding Decimals *4. Percentages* • Introduction to Percentages • Using Percentages *5. Ratios* • Ratios Introduction • Ratios *6. Converting Between Fractions, Decimals and Percentages* • Converting Between Fractions and Decimals • Converting Between Percentages and Fractions: Simplifying Fractions • Application: Town Planning *7. Online Worksheets* 1. Fractions • Introduction to Fractions Practice • Mixed Fractions Practice • Adding Fractions with the Same Denominator Practice • Subtracting Fractions with the Same Denominator Practice • Adding Fractions with a Different Denominator Practice • Subtracting Fractions with a Different Denominator Practice • Subtracting Mixed Numbers with a Different Denominator Practice ***Resources continue on next page***

Converting Between Fractions and Decimals
Converting Between Percentages and Fractions
Fraction Basics
Equivalent Fractions
Mixed Numbers
Fraction Walls
Fractions and Number Lines
Adding Fractions with the Same Denominator
Subtracting Fractions with the Same Denominator
Adding Fractions with a Different Denominator
Subtracting Fractions with a Different Denominator
Adding Mixed Fractions with the Same Denominator
Subtracting Mixed Fractions with the Same Denominator
Subtracting Mixed Fractions with a Different Denominator
Multiplying Fractions Numerically
Multiplying Fractions Using Models
Dividing Fractions
Dividing Fractions by Simplifying
How Decimals Work
Adding Decimals
Subtracting Decimals
Multiplying Decimals
Dividing Decimals
Rounding Decimals
Introduction to Percentages
Using Percentages
Ratios Introduction
Ratios
Converting Between Fractions and Decimals
Converting Between Percentages and Fractions: Simplifying Fractions
Application: Town Planning
Introduction to Fractions Practice
Mixed Fractions Practice
Adding Fractions with the Same Denominator Practice
Subtracting Fractions with the Same Denominator Practice
Adding Fractions with a Different Denominator Practice
Subtracting Fractions with a Different Denominator Practice
Subtracting Mixed Numbers with a Different Denominator Practice
Resources continue on next page

Content Descriptor/s *(see previous page)*	EP Lessons in *2. Fractions, Decimals and Percentages (continued from previous page)*	
	• Multiplying Fractions Practice • Dividing Fractions Practice • Mixed Skills Practice • Comparing Fractions with the Same Denominator Practice • Comparing Fractions as Decimals Practice • Fractions and Food Practice: • Fractions and Shopping Practice • Fractions and the Cosmos Practice 2. Decimals • Adding Decimals Practice • Subtracting Decimals Practice • Multiplying Decimals Practice • Dividing Decimals Practice • Rounding Decimals Practice • Decimals Mixed Practice 3. Percentages • Percentages Practice 4. Ratios • Ratios Practice • Percentages and Ratios Mixed Practice 5. Converting Between Fractions, Decimals and Percentages • Converting Between Fractions and Decimals Practice • Converting Between Fractions, Decimals and Percentages Mixed Practice • Converting Between Decimals and Percentages Practice • Converting Between Percentages and Fractions Practice	*8. Further Resources* Hands-On Activities Real Number Dominoes • Real Number Dominoes • Real Number Dominoes Student Worksheet • Real Number Dominoes Teacher Guide Problem Solving • Boxing Day Bonanza Spelling and Definitions • Definitions List: Real Numbers • Definitions MCQ: Real Numbers • Spelling List: Real Numbers Topic Tests • Fractions, Decimals and Percentages

Content Descriptor/s	**EP Lessons in *3. Financial Contexts***	
AC9M7N09 use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts; formulate problems, choosing representations and efficient calculation strategies, using digital tools as appropriate; interpret and communicate solutions in terms of the situation, justifying choices made about the representation	*1. Prior Learning* • Introduction to Percentages • Converting Percentages • Percentages of a Number • Discounts • Calculating Discounts *2. Best Buys* • Cost per Item • Best Buys Using Unit Costs • When a Best Buy isn't the Best Option *3. Online Worksheets* • Cost per Item Practice • Calculating a Best Buy Practice • Unit Pricing Practice • Budgeting Practice • Uses of Financial Mathematics Practice *4. Further Resources* Hands-On Activities Planning a Party • Planning a Party • Planning a Party Student Worksheet • Planning a Party Teacher Guide	Problem Solving • Choosing a Usage Plan Skill Enrichment • Budgeting: Preparing a Personal Budget • Review: Budgeting Spelling and Definitions • Definitions List: Money and Financial Mathematics • Definitions MCQ: Money and Financial Mathematics • Spelling List: Money and Financial Mathematics Topic Tests • Discounts and GST

Algebra

Content Descriptor/s	EP Lessons in *1. Algebra*	
AC9M7A01 recognise and use variables to represent everyday formulas algebraically and substitute values into formulas to determine an unknown AC9M7A02 formulate algebraic expressions using constants, variables, operations and brackets	*1. Prior Learning* • Addition • Subtraction • Multiplication • Division • Order of Operations *2. Introduction to Algebra* • Welcome to Algebra • Substitution • Arithmetic in Algebra • Order of Operations in Algebra • Order of Operations in Algebraic Equations *3. Substituting and Evaluating Algebraic Expressions* • Simplifying Addition in Algebra • Simplifying Subtraction in Algebra • Simplifying Multiplication in Algebra • Simplifying Division in Algebra • Substitution in Algebraic Expressions • Evaluating Algebraic Expressions • Using Formulas • Finding Formulas *4. Contextualising Algebra* • Translating Between Word Descriptions and Algebraic Expressions • Translating Between Authentic Situations and Algebraic Expressions *5. Online Worksheets* 1. Introduction to Algebra • Introduction to Algebra Practice • Arithmetic Laws and Algebra	2. Substituting and Evaluating Algebraic Expressions • Simplifying Algebraic Expressions Practice • Evaluating Algebraic Expressions Practice • Formulas Practice 3. Contextualising Algebra • Relating Words to Algebra Practice *6. Further Resources* Extension • Expanding I • Expanding II Hands-On Activities Finding Patterns and Making Fractals • Finding Patterns and Making Fractals • Finding Patterns and Making Fractals Student Worksheet • Finding Patterns and Making Fractals Teacher Guide Maths in Context • Fractal Trees and Recursion (Year 7-10) • Patterns Found in Nature (Year 5-10) Spelling and Definitions • Definitions List: Patterns and Algebra • Definitions MCQ: Patterns and Algebra • Spelling List: Patterns and Algebra Topic Tests • Algebraic Conventions

Content Descriptor/s	EP Lessons in *2. Linear and Non-Linear Relationships*	
AC9M7A02 formulate algebraic expressions using constants, variables, operations and brackets AC9M7A03 solve one-variable linear equations with natural number solutions; verify the solution by substitution AC9M7A04 describe relationships between variables represented in graphs of functions from authentic data AC9M7A05 generate tables of values from visually growing patterns or the rule of a function; describe and plot these relationships on the Cartesian plane	*1. Prior Learning* • Number Lines, Axes and Coordinates • Quadrants of Cartesian Planes • Coordinates • Order of Operations • Applying the Order of Operations *2. Cartesian Planes* • Introduction to Cartesian Planes • Coordinates • Plotting on a Cartesian Plane *3. Linear Graphs* • Drawing Graphs • Interpreting Graphs • Analysing Graphs *4. Solving Linear Equations* • Balancing Equations • Concrete Models • Flow Charts • Visual Methods for Solving Linear Equations • Solving One-Step Linear Equations • Solving Two-Step Linear Equations • Solving Linear Equations with Brackets • Checking Solutions *5. Online Worksheets* 1. Cartesian Planes • Cartesian Planes Practice • Coordinates Practice • Plotting on a Cartesian Plane Practice • Plotting Points Practice • Applications of Cartesian Planes Practice • Cartesian Planes Mixed Practice	2. Linear Graphs • Drawing Graphs Practice • Reading Graphs Practice • Analysing Graphs Practice • Linear Graphs Mixed Practice 3. Linear Equations • Balancing Equations Practice • Concrete Models and Flow Charts Practice • Visual Methods for Solving Linear Equations Practice • Solving Linear Equations with Visual Methods Practice • Solving One-Step Linear Equations Practice • Solving Two-Step Linear Equations Practice • Solving Linear Equations with Brackets Practice • Solving Linear Equations with Algebraic Methods Practice • Checking Solutions Practice • Solving Linear Equations Mixed Practice *6. Further Resources* Extension • Extension: Linear and Non-Linear Lines • Extension: Multiple Lines on Cartesian Planes • Extension: Plotting Linear Equations in Context ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *2. Linear and Non-Linear Relationships (continued from previous page)*	
	Hand-On Activities Physically Balancing Equations • Physically Balancing Equations • Physically Balancing Equations Student Worksheet • Physically Balancing Equations Teacher Guide Sinking Ships with Coordinates • Sinking Ships with Coordinates • Sinking Ships with Coordinates Student Worksheet • Sinking Ships with Coordinates Teacher Guide	Problem Solving • Applications of Cartesian Planes • Opening a New Aquarium Spelling and Definitions • Definitions List: Linear and Non-Linear Relationships • Definitions MCQ: Linear and Non-Linear Relationships • Spelling List: Linear and Non-Linear Relationships Topic Tests • Cartesian Planes and Linear Graphs • Solving Linear Equations

Measurement

Content Descriptor/s	EP Lessons in *1. Measurement*	
AC9M7M01 solve problems involving the area of triangles and parallelograms using established formulas and appropriate units AC9M7M02 solve problems involving the volume of right prisms including rectangular and triangular prisms, using established formulas and appropriate units	*1. Prior Learning* 1. Units • Units of Measurement • Converting Units of Length • Comparing Units of Length • Units of Capacity • Units of Mass • Applications of Converting Units of Capacity • Application of Converting Units of Mass 2. Perimeter and Area • Perimeter • Perimeter of Composite Shapes • Understanding the Area of a Rectangle • Calculating the Area of a Rectangle • Area of Composite Shapes • Area and Unknown Sides	*2. Units of Measurement* • Units of Length • Converting Further Units of Length • Units of Mass • Converting Further Units of Mass and Applications • Converting Units of Capacity • Converting Further Units of Capacity and Applications *3. Area* • Area of Rectangles and Squares • Area of Triangles • Area of Parallelograms • Area of Composite Shapes ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	**EP Lessons in *1. Measurement (continued from previous page)***	
	4. Volume • Rectangular Prisms • Calculating Volume of Rectangular Prisms • Calculating Volume of Triangular Prisms *5. Online Worksheets* 1. Units of Measurement • Units of Length Practice • Units of Mass Practice • Units of Capacity Practice • Units of Measurement Mixed Practice 2. Area • Area of Rectangles & Squares Practice • Area of Triangles Practice • Area of Parallelograms Practice • Area of Composite Shapes Practice • Area Mixed Practice	3. Volume • Volume of Rectangular Prisms Practice • Volume of Composite Shapes Practice • Volume of Triangular Prisms Practice • Volume Mixed Practice *6. Further Resources* Spelling and Definitions • Definitions List: Using Units of Measurement • Definitions MCQ: Using Units of Measurement • Spelling List: Using Units of Measurement Topic Tests • Perimeter
Content Descriptor/s	**EP Lessons in *2. Angles***	
AC9M7M04 identify corresponding, alternate and co-interior relationships between angles formed when parallel lines are crossed by a transversal; use them to solve problems and explain reasons AC9M7M05 demonstrate that the interior angle sum of a triangle in the plane is 180° and apply this to determine the interior angle sum of other shapes and the size of unknown angles	*1. Prior Learning* • Points • Lines • Angles • Using Angles *2. Points, Lines and Angles* • Introduction to Angles • Angles around a Point • Parallel Lines • Angles around Parallel Lines	*3. Online Worksheets* 1. Points, Lines and Angles • Types of Angles Practice • Angles Around a Point Practice • Angles Around Parallel Lines Practice • Angles, Points and Lines Mixed Practice *4. Further Resources* Extension • Exterior Angles Topic Tests • Angle Relationships

Space

Content Descriptor/s	EP Lessons in *1. Shapes and Solids*	
AC9M7SP01 represent objects in 2 dimensions; discuss and reason about the advantages and disadvantages of different representations AC9M7SP02 classify triangles, quadrilaterals and other polygons according to their side and angle properties; identify and reason about relationships	*1. Prior Learning* • 2D Shapes • Quadrilaterals • Circular Shapes • Identifying Polygons • Regular Polygons • Irregular Polygons • Composite Shapes • Prisms • Pyramids • Curved Solids *2. Shapes and Solids* • Introduction to Solids • Drawing Prisms • Drawing Pyramids • Drawing Curved Solids *3. Online Worksheets* • 3D Solids Practice • Drawing Prisms and Pyramids Practice • Drawing Curved Solids Practice • Shapes and Solids Mixed Practice *4. Further Resources* Extension • Extension: Composite Shapes • Extension: Platonic Solids • Extension: Polyhedra Online Worksheets • Extension Mixed Practice • Classifying Polyhedra Practice • Composite Solids Practice • Platonic Solids Practice	Hands-On Activities Geoboard Tetris • Geoboard Tetris • Geoboard Tetris Student Worksheet • Geoboard Tetris Teacher Guide • Paper Geoboard Tetris Student Worksheet • Printable Geoboard Playdough Prisms • Playdough Prisms • Playdough Prisms Student Worksheet • Playdough Prisms Teacher Guide • Playdough Recipe Spelling and Definitions • Definitions List: Shape • Definitions MCQ: Shape • Spelling List: Shape

Content Descriptor/s	**EP Lessons in *2. Transformation***	
AC9M7SP03 describe transformations of a set of points using coordinates in the Cartesian plane, translations and reflections on an axis, and rotations about a given point	*1. Prior Learning* • Introduction to Cartesian Coordinates • Translation on a Grid • Reflection on a Grid • Rotation on a Grid *2. Symmetry* • Line Symmetry • Rotational Symmetry *3. Transformations* • Introduction to Cartesian Planes • Translation on Cartesian Planes • Reflection on Cartesian Planes • Rotation on Cartesian Planes *4. Online Worksheets* • Symmetry Practice • Cartesian Coordinates Practice • Translation Practice • Reflection Practice • Rotation Practice • Transformations Mixed Practice	*5. Further Resources* Hands-On Activities • Transformation Golf Spelling and Definitions • Definitions List: Location and Transformation • Definitions MCQ: Location and Transformation • Spelling List: Transformations Topic Tests • Symmetry
Content Descriptor/s	**EP Lessons in *3. Geometric Reasoning***	
AC9M7SP02 classify triangles, quadrilaterals and other polygons according to their side and angle properties; identify and reason about relationships	*1. Prior Learning* • Triangles • Quadrilaterals *2. Triangles* • Types of Triangles • Angles in a Triangle *3. Quadrilaterals* • Classifying Quadrilaterals • Angles in Quadrilaterals • Applying Rules to Quadrilaterals	*4. Online Worksheets* 1. Triangles • Types of Triangles Practice • Angles in a Triangle Practice • Triangles Mixed Practice 2. Quadrilaterals • Types of Quadrilaterals Practice • Angles in a Quadrilateral Practice • Quadrilaterals Mixed Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *3. Geometric Reasoning (continued from previous page)*	
	6. Further Resources Extension • Extension: Geometric Reasoning • Extension: Triangles Hands-On Activities Angles Scavenger Hunt • Angles Scavenger Hunt • Angles Scavenger Hunt Student Worksheet • Angles Scavenger Hunt Teacher Guide	Triangles in the Real World • Triangles in the Real World • Triangles in the Real World Student Worksheet • Triangles in the Real World Teacher Guide Spelling and Definitions • Definitions List: Geometric Reasoning • Definitions MCQ: Geometric Reasoning • Spelling List: Geometric Reasoning

Probability

Content Descriptor/s	EP Lessons in *5. Probability*	
AC9M7P01 identify the sample space for single-stage events; assign probabilities to the outcomes of these events and predict relative frequencies for related events AC9M7P02 conduct repeated chance experiments and run simulations with a large number of trials using digital tools; compare predictions about outcomes with observed results, explaining the differences	*1. Prior Learning* • Fractions, Decimals and Percentages • Likelihood • Proportional Reasoning • Theoretical Probability • Experimental Probability *2. Probability* • Introduction to Likelihood • Introduction to Probability • Comparing Probabilities • Probability Terminology • Types of Probability • Calculating Probability • Experimental Probability • Probability Summary	*3. Online Worksheets* • Introduction to Chance Practice • Introduction to Probability Practice • Finding Probabilities Practice • Experimental Probability Practice • Chance Mixed Practice *4. Further Resources* Extension • Rearranging Equations • Rearranging the Experimental Probability Equation ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	**EP Lessons in *5. Probability (continued from previous page)***	
	Hands-On Activities A Chance of Rain • A Chance of Rain • A Chance of Rain Student Worksheet • A Chance of Rain Teacher Guide A Tree Snake Chance Game • A Tree Snake Chance Game • A Tree Snake Chance Game Student Worksheet • A Tree Snake Chance Game Teacher Guide Maths in Context Unfortunate Events (Year 5-10)	Problem Solving • Exploring Outcomes • The Probability of Observations Spelling and Definitions • Definitions List: Chance • Definitions MCQ: Chance • Spelling List: Chance Topic Tests • Finding Probability • Introduction to Probability

Statistics

Content Descriptor/s	EP Lessons in *6. Statistics*	
AC9M7ST01 acquire data sets for discrete and continuous numerical variables and calculate the range, median, mean and mode; make and justify decisions about which measures of central tendency provide useful insights into the nature of the distribution of data AC9M7ST02 create different types of numerical data displays including stem-and-leaf plots using software where appropriate; describe and compare the distribution of data, commenting on the shape, centre and spread including outliers and determining the range, median, mean and mode	*1. Prior Learning* • Tallies and Tables • Column (Bar) Graphs • Side-by-Side Column Graphs • Relating Graphs and Tables • Misleading Data and Graphs *2. Introduction to Data* • Introduction to Types of Data • Collecting Data: Primary and Secondary • Analysing Numerical Data *3. Measures of Centre and Spread* • Mean • Median • Mode • Comparing Measures of Centre • The Range • Calculating Measures of Centre and Spread *4. Displaying Data* • Displaying Data • Selecting Appropriate Graphs • Dot Plots and Column (Bar) Graphs • Introduction to Stem and Leaf Plots • Line Graphs • Pie Charts and Divided Bar Graphs • Histograms • Finding Measures of Centre and Spread in Data Displays • Creating an Infographic • Outliers	*5. Online Worksheets* 1. Introduction to Data • Introduction to Data Practice • Collecting Data Practice • Introduction to Data Mixed Practice 2. Measures of Centre and Spread • The Mean Practice • The Median Practice • The Mode Practice • Comparing Measures of Centre Practice • The Range Practice • Calculating Measures of Centre and Spread Practice • Mean, Median and Mode Mixed Practice 3. Displaying Data • Displaying Data Practice • Pick Your Display Method Practice • Dot Plots and Column Graphs Practice • Stem and Leaf Plots Practice • Line Graphs Practice • Pie Charts and Divided Bar Graphs Practice • Histograms Practice • Finding Measures of Centre and Spread in Data Displays Practice • Outliers Practice • Displaying Data Mixed Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	**EP Lessons in *6. Statistics (continued from previous page)***	
	6. Further Resources Extension • Extension: Data Representation and Interpretation • Extension: Dot Plots • Extension: Stem and Leaf Plots Hands-On Activities • Lolly Graphs • Lolly Graphs Student Worksheet • Lolly Graphs Teacher Guide Problem Solving • Scrambled Statistics	Spelling and Definitions • Definitions List: Data Representation and Interpretation • Definitions MCQ: Data Representation and Interpretation • Spelling List: Data Representation and Interpretation Topic Tests • Data Displays • Mean, Median, Mode and Range

Year 07 Pre-Tests and Post-Tests

Content Descriptor/s	**EP Lessons**	
	1. Pre-Tests • Year 07 Number Pre-Test • Year 07 Algebra Pre-Test • Year 07 Measurement Pre-Test • Year 07 Geometry Pre-Test • Year 07 Chance Pre-Test • Year 07 Data Pre-Test	*2. Post-Tests* • Year 07 Number Post-Test • Year 07 Algebra Post-Test • Year 07 Measurement Post-Test • Year 07 Geometry Post-Test • Year 07 Chance Post-Test • Year 07 Data Post-Test

Year 8

Number

Content Descriptor/s	EP Lessons in *1. Real Numbers and Integers*	
AC9M8N01 recognise irrational numbers in applied contexts, including square roots and π AC9M8N03 recognise terminating and recurring decimals, using digital tools as appropriate AC9M8N04 use the 4 operations with integers and with rational numbers, choosing and using efficient strategies and digital tools where appropriate AC9M8N05 use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts; formulate problems, choosing efficient calculation strategies and using digital tools where appropriate; interpret and communicate solutions in terms of the situation, reviewing the appropriateness of the model	*1. Prior Learning* 1. Fractions 1. Introduction to Fractions • Fraction Basics • Equivalent Fractions • Mixed Numbers • Fraction Walls • Fractions and Number Lines 2. Adding Fractions • Adding Fractions with the Same Denominator • Adding Mixed Fractions with the Same Denominator • Adding Fractions with a Different Denominator 3. Subtracting Fractions • Subtracting Fractions with the Same Denominator • Subtracting Fractions with a Different Denominator • Subtracting Mixed Fractions with the Same Denominator • Subtracting Mixed Fractions with a Different Denominator	4. Multiplying and Dividing Fractions • Multiplying Fractions Numerically • Multiplying Fractions Using Models • Dividing Fractions • Dividing Fractions by Simplifying 5. Comparing and Using Fractions • Comparing Fractions • Comparing Fractions with the Same Denominator • Using Fractions - Food • Using Fractions - Money • Using Fractions - Space 2. Decimals • Adding and Subtracting Decimals • Multiplying, Dividing and Rounding Decimals 3. Percentages • Introduction to Percentages • Using Percentages 4. Converting between Fractions, Decimals and Percentages • Converting Percentages to Fractions • Converting Between Percentages and Fractions • Percentages and Decimals ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *1. Real Numbers and Integers (continued from previous page)*	
	2. Decimals • Decimals • Rational Numbers on the Number Line • Adding and Subtracting Decimals on a Number Line • Multiplying Decimals • Dividing Decimals • Terminating Decimals and Rounding • Recurring Decimals *3. Percentages* • Percentages and Populations *4. Irrational Numbers* • Irrational Numbers *5. Operations with Integers* • Integers • Addition • Subtraction • Multiplication • Long Division • Division • Order of Operations • Negative Integer Addition and Subtraction • Negative Integer Multiplication and Division *6. Online Worksheets* 1. Decimals • Decimals Practice • Recurring Decimals Practice • Terminating Decimals and Rounding Practice • Decimals Mixed Practice 2. Percentages • Percentages and Populations Practice	3. Irrational Numbers • Irrational Numbers Practice 4. Integers • Addition and Subtraction Practice • Addition and Subtraction Practice • Multiplication and Division Practice • Multiplication and Division Practice • Mixed Operations Practice • Mixed Operations Practice *7. Further Resources* Maths in Context • Happy Pi Day! (Year 5-10) • The Genetic Sudokube (Year 8-10) Spelling and Definitions • Definitions List: Decimals • Definitions List: Irrational Numbers • Definitions List: Percentages • Definitions MCQ: Decimals • Definitions MCQ: Irrational Numbers • Definitions MCQ: Percentages • Spelling List: Real Numbers • Definitions List: Integers and Rational Numbers • Definitions MCQ: Integers and Rational Numbers • Spelling List: Number and Place Value

Content Descriptor/s	EP Lessons in *2. Indices*	
AC9M8N02 establish and apply the exponent laws with positive integer exponents and the zero-exponent, using exponent notation with numbers	*1. Prior Learning* • Index Notation • Indices • Perfect Squares *2. Indices* • The Power of Zero • Multiplying Indices • Dividing Indices Practice • Power of Powers Practice • Powers of Multiplied Terms Practice *4. Further Resources* 1. Extension • Introduction to Scientific Notation (Standard Form) - Large Numbers • Introduction to Scientific Notation (Standard Form) - Small Numbers • Ordering Numbers and Estimating	• Dividing Indices • Powers of Powers • Powers of Multiplied Terms • Practising the Index Laws *3. Online Worksheets* • Indices Practice • The Power of Zero Practice • Multiplying Indices Practice • Calculations in Scientific Notation (Standard Form) • Significant Figures and Scientific Notation (Standard Form) • Definitions List: Scientific Notation 2. Spelling and Definitions Definitions List: Indices Definitions MCQ: Indices 3. Topic Test Multiplying and Dividing Indices
Content Descriptor/s	**EP Lessons in *3. Financial Contexts***	
AC9M8N05 use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts; formulate problems, choosing efficient calculation strategies and using digital tools where appropriate; interpret and communicate solutions in terms of the situation, reviewing the appropriateness of the model	*1. Prior Learning* • Introduction to Percentages • Using Percentages • Budgeting and Usage Plans • Percentage Discounts and Unit Pricing Core Prior Knowledge Money • Australian Money • Calculating Change • Converting Money • Count the Change • International Money • Money • Shopping	Number • Addition • Area Models • Counting • Expanding Numbers • Half • Multiplication • Numbers in Written Form • Place Values • Quarters and Eighths • Subtraction • What is a Number? ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *3. Financial Contexts (continued from previous page)*	
	2. Financial Mathematics • Profit and Loss • Calculating Profit and Loss • Discounts • Calculating Discounts • Percentage Discounts and Unit Pricing • Calculating Percentage Discounts • Percentages and Money • Budgeting and Usage Plans • Supply Chains *3. Tax* • Goods and Services Tax • Income Tax *4. Simple Interest* • Introduction to Interest • Calculating Simple Interest • Rearranging the Simple Interest Formula	*5. Online Worksheets* • Profit and Loss Practice • Calculating Profit and Loss Practice • Discounts Practice • Calculating Percentage Discounts Practice • Percentages and Money Practice • Supply Chains Practice *6. Further Resources* Spelling and Definitions • Definitions List: Financial Mathematics • Definitions MCQ: Financial Mathematics • Spelling List: Money and Financial Mathematics Topic Tests • Discounts and GST

Algebra

Content Descriptor/s	EP Lessons in *1. Algebra Foundations*	
AC9M8A01 create, expand, factorise, rearrange and simplify linear expressions, applying the associative, commutative, identity, distributive and inverse properties AC9M8A03 use mathematical modelling to solve applied problems involving linear relations , including financial contexts; formulate problems with linear functions, choosing a representation; interpret and communicate solutions in terms of the situation, reviewing the appropriateness of the model	*1. Prior Learning* • Substitution • Substitution in Algebraic Expressions • Evaluating Algebraic Expressions • Arithmetic in Algebra • Order of Operations in Algebra • Order of Operations in Algebraic Equations • Variables, Conventions and Arithmetic • Simplifying Expressions • Evaluating Expressions and Using Formulas	*2. Expanding* • Introduction to Expanding • Expanding • Further Expanding *3. Factorising* • Introduction to Factorising • Greatest Common Divisor (Highest Common Factor) • Factorising Algebraic Expressions • Factorising Algebraic Expressions with Powers ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	**EP Lessons in *1. Algebra Foundations (continued from previous page)***	
	4. Simplifying • Simplifying Addition and Subtraction • Simplifying Multiplication and Division *5. Associative, Commutative and Distributive Laws* • The Commutative Law • The Associative Law • The Distributive Law • Using the Distributive Law *6. Word Problems* • Writing and Evaluating Algebraic Expressions • Translating Between Situations and Algebraic Expressions *6. Online Worksheets* 1. Expanding • Expanding Practice • Expanding with the Distributive Law Practice • Expanding with Powers Practice 2. Factorising • Introduction to Factorising Practice • Greatest Common Divisor (Highest Common Factor) Practice • Factorising Algebraic Expressions Practice • Factorising Algebraic Expressions with Powers Practice 3. Simplifying • Simplifying Addition and Subtraction Practice • Simplifying Multiplication and Division Practice	4. Associative, Commutative and Distributive Laws • Commutative Law Practice • Associative Law Practice • Distributive Law Practice • Arithmetic Laws Mixed Practice 5. Word Problems • Writing and Evaluating Algebraic Expressions Practice • Translating Between Situations and Algebraic Expressions Practice *7. Further Resources* Maths in Context • Fractal Trees and Recursion (Year 7-10) • Patterns Found in Nature (Year 5-10) Spelling and Definitions • Definitions List: Patterns and Algebra • Definitions MCQ: Patterns and Algebra • Spelling List: Patterns and Algebra

Content Descriptor/s	**EP Lessons in *2. Linear Relations***	
AC9M8A02 graph linear relations on the Cartesian plane using digital tools where appropriate; solve linear equations and one-variable inequalities using graphical and algebraic techniques; verify solutions by substitution AC9M8A04 experiment with linear functions and relations using digital tools, making and testing conjectures and generalising emerging patterns	*1. Prior Learning* • Tables of Values • Cartesian Planes • Introduction to Linear Equations *2. Linear Graphs* • Plotting Linear Relationships • Analysing Travel Graphs • Water Evaporation Graphs • Features of Graphs • Gradient of a Line • Equation of a Line • Linear Patterns and Rules • Solving Equations Using Graphical Methods • Reading Graphs • Analysing Linear Graphs • Plotting and Reading Travel Graphs *3. Solving Linear Equations* • Arithmetic in Algebra • Order of Operations in Algebra • Order of Operations in Algebraic Equations • Non-Integer Solutions to Linear Equations • Rearranging Equations • Solving Using Algebraic Methods • Solving Using Graphical Methods • Applications of Linear Equations	*4. Online Worksheets* 1. Linear Graphs • Features of Linear Graphs Practice • Linear Equations and the Gradient Practice • Linear Equations and the y-intercept Practice • Reading Graphs Practice • Travel Graphs Practice • Comparing Graphs Practice • Rearranging Linear Equations Practice 2. Linear Equations • Linear Equations Practice • Linear Equations and the Gradient Practice • Linear Equations and the y-intercept Practice *5. Further Resources* Spelling and Definitions • Definitions List: Linear and Non-Linear Relationships • Definitions MCQ: Linear and Non-Linear Relationships • Spelling List: Linear and Non-Linear Relationships

Measurement

Content Descriptor/s	EP Lessons in *1. Measurement*	
AC9M8M01 solve problems involving the area and perimeter of irregular and composite shapes using appropriate units AC9M8M02 solve problems involving the volume and capacity of right prisms using appropriate units AC9M8M03 solve problems involving the circumference and area of a circle using formulas and appropriate units	*1. Prior Learning* • Units of Measurement • Perimeter • Perimeters of Composite Shapes • Area • Volume of Rectangular Prisms *2. Converting Units of Measure* • Units of Area • Converting Between Units of Area • Converting Between Units of Area Applications • Choosing Appropriate Units of Volume • Converting Units of Volume *3. Perimeter* • Perimeter • Perimeters of Kites, Rhombuses, Trapeziums and Parallelograms • Perimeter and Circumference of Composite Shapes *4. Area* • Area of Rectangles & Squares • Area of Triangles • Area of Parallelograms • Area of Rhombuses and Kites • Area of Trapeziums • Area of Composite Shapes I • Area of Composite Shapes II	*5. Circles* • Parts of a Circle • Circumference of Circles • Using the Circumference of Circles • Calculating the Area of Circles • Using the Area of Circles • Constructing Circles *6. Volume* • Rectangular Prisms • Types of Prisms • Calculating Volume of Triangular Prisms *7. Online Worksheets* 1. Converting Units of Measurement • Units of Area Practice • Converting between Units of Area Practice • Converting between Units of Area Applications Practice • Units of Volume Practice • Converting Units of Volume Practice • Units Mixed Practice 2. Perimeter • Perimeters of Kites, Rhombuses, Trapeziums and Parallelograms Practice 3. Area • Area of Parallelograms Practice • Area of Rhombus and Kites Practice • Area of Trapeziums Practice • Area Mixed Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	**EP Lessons in *1. Measurement (continued from previous page)***	
	4. Circles • Parts of a Circle Practice • Circumference of Circles Practice • Using the Circumference of Circles Practice • Calculating the Area of Circles Practice • Using the Area of Circles Practice • Circles Mixed Practice 5. Volume • Types of Prisms Practice • Triangular Prisms Practice *8. Further Resources* Extension • Calculating Volume of Cylinders • Cylinder Exercises Practice • Volume of Cylinders Practice • Volume of Composite Shapes • Calculating Volume of Other Regular and Irregular Prisms • Volume of Other Regular and Irregular Prisms Practice	Spelling and Definitions • Definitions List: Measurement • Definitions MCQ: Measurement • Spelling List: Measurement Topic Tests • Calculating Volume • Perimeter • Units of Area
Content Descriptor/s	**EP Lessons in *2. Time***	
AC9M8M04 solve problems involving duration, including using 12- and 24-hour time across multiple time zones	*1. Prior Learning* • Days, Months, Seasons • Everyday Units of Time • Adding Units of Time • Timetables and Transport • Personal Timetables Introduction • Timetables • Timetables and Transport Introduction *2. Time* • Clocks • Duration	• Converting Between 12- and 24- Hour Time • Timetables • Time Zones *3. Online Worksheets* • Clocks Practice • Duration Practice • Timetables Practice • Time Zones Practice

	• 12-Hour Time • 24-Hour Time	
Content Descriptor/s	**EP Lessons in *3. Ratios and Rates***	
AC9M8M05 recognise and use rates to solve problems involving the comparison of 2 related quantities of different units of measure	*1. Prior Learning* • Ratios Introduction • Ratios *2. Ratios and Rates* • Ratios • Rates • Applying Ratios and Rates *3. Online Worksheets* • Ratios Practice • Rates Practice • Applying Rates and Ratios Practice • Ratios and Rates Mixed Practice	*4. Further Resources* Spelling and Definitions • Definitions List: Ratios and Rates • Definitions MCQ: Ratios and Rates Topic Tests • Rates and Ratios
Content Descriptor/s	**EP Lessons in *4. Pythagoras' Theorem***	
AC9M8M06 use Pythagoras' theorem to solve problems involving the side lengths of right-angled triangles	*1. Pythagoras' Theorem* • Parts of a Triangle and the Hypotenuse • Pythagoras' Theorem	*2. Further Resources* Extended Investigations • Building with Pythagoras Topic Tests • Pythagoras' Theorem

Space

Content Descriptor/s	EP Lessons in *1. Congruence and Similarity*	
AC9M8SP01 identify the conditions for congruence and similarity of triangles and explain the conditions for other sets of common shapes to be congruent or similar, including those formed by transformations AC9M8SP02 establish properties of quadrilaterals using congruent triangles and angle properties, and solve related problems explaining reasoning AC9M8SP04 design, create and test algorithms involving a sequence of steps and decisions that identify congruency or similarity of shapes, and describe how the algorithm works	*1. Prior Learning* • Angles • Symmetry • Triangles • Properties of Quadrilaterals • Translation • Reflection • Rotation • Transforming Shapes *2. Congruence and Transformation of Plane Shapes* • Introduction to Congruence • Translation and Congruence of Plane Shapes • Rotation and Reflection of Plane Shapes *3. Congruence of Triangles* • Angles in a Triangle • Conditions for Congruence: SSS and SAS • Conditions for Congruence: ASA, AAS and HL • Working with Congruent Triangles *4. Congruence of Quadrilaterals* • Applying Rules to Quadrilaterals • Classifying Quadrilaterals • Congruence of Squares, Rectangles and Parallelograms • Congruence of Rhombuses, Trapeziums and Kites *5. Similarity* • Introduction to Similarity • Similarity Tests • Similarity and Angles • Similarity and Multiple Triangles	*6. Applications* • Applications of Geometric Reasoning *7. Online Worksheets* 1. Congruence and Transformation of Plane Shapes • Translation and Congruence of Plane Shapes Practice • Rotation and Reflection of Plane Shapes Practice • Practice: Rotation • Practice: Reflection • Practice: Translation 2. Congruence of Triangles • Triangles Practice • SSS and SAS Congruence Tests Practice • ASA, AAS and HL Congruence Tests Practice • Working with Congruent Triangles Practice 3. Congruence of Quadrilaterals • Types of Quadrilaterals Practice • Quadrilaterals Mixed Practice • Congruence of Squares, Rectangles and Parallelograms Practice • Congruence of Rhombuses, Trapeziums and Kites Practice 4. Similarity • Introduction to Similarity Practice • Similarity Tests Practice • Similarity and Angles Practice • Similarity and Multiple Triangles Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *1. Congruence and Similarity (continued from previous page)*	
	5. Applications • Applications of Geometric Reasoning Practice *8. Further Resources* Maths in Context • Mind-Boggling Paradoxes (Year 8-10) Spelling and Definitions • Definitions List: Geometric Reasoning • Definitions MCQ: Geometric Reasoning • Spelling List: Geometric Reasoning	

Probability

Content Descriptor/s	EP Lessons in *5. Probability*	
AC9M8P01 recognise that complementary events have a combined probability of one; use this relationship to calculate probabilities in applied contexts AC9M8P02 determine all possible combinations for 2 events, using two-way tables, tree diagrams and Venn diagrams, and use these to determine probabilities of specific outcomes in practical situations AC9M8P03 conduct repeated chance experiments and simulations, using digital tools to determine probabilities for compound events, and describe results	*1. Prior Learning* • Converting Between Fractions and Decimals • Converting Between Percentages and Fractions • Probability • Calculating Probability • Theoretical Probability • Experimental Probability *2. Complementary Events* • Complementary Events • Calculating Complements *3. Chance Tables and Diagrams* • Describing Probabilities • Using Descriptions of Probability • Venn Diagrams • Using Venn Diagrams • Making Your Own Venn Diagrams • Two-Way Tables • Using Two-Way Tables	• Making Your Own Two-Way Tables • Tree Diagrams • Using Tree Diagrams *4. Further Resources* 1. Maths in Context • Unfortunate Events (Year 5-10) 2. Problem Solving • Representing Data in Venn Diagrams 3. Hands-On Activities • Pancakes and Chai • Pancakes and Chai Student Worksheet • Pancakes and Chai Teacher Guide 4. Spelling and Definitions • Definitions List: Chance • Definitions MCQ: Chance • Spelling List: Chance 5. Topic Tests • Descriptions of Probability and Complementary Events

Statistics

Content Descriptor/s	EP Lessons in *6. Statistics*	
AC9M8ST01 investigate techniques for data collection including census, sampling, experiment and observation, and explain the practicalities and implications of obtaining data through these techniques AC9M8ST02 analyse and report on the distribution of data from primary and secondary sources using random and non-random sampling techniques to select and study samples AC9M8ST03 compare variations in distributions and proportions obtained from random samples of the same size drawn from a population and recognise the effect of sample size on this variation AC9M8ST04 plan and conduct statistical investigations involving samples of a population; use ethical and fair methods to make inferences about the population and report findings, acknowledging uncertainty	*1. Prior Learning* • Data Sources & Data Types • Measures of Centre and Spread • Displays of Data *2. Introduction to Data* • Introduction to Types of Data • Introduction to Data Collection • Data Collection Methods • Collecting Data: Primary and Secondary • Survey and Simulation • Experiment and Observation *3. Measures of Centre and Spread* • Mean • The Median • Mode • Comparing Measures of Centre • The Range • Calculating Measures of Centre and Spread *4. Displaying Data* • Displaying Data • Choosing an Appropriate Data Display • Dot Plots and Column (Bar) Graphs • Histograms • Pie Charts and Divided Bar Graphs • Introduction to Stem and Leaf Plots • Line Graphs *5. Collecting Data* • Methods of Collecting Data • Introduction to Random Sampling • Bias in Data • Adding and Removing Data	• Collecting Continuous Data • Samples and Populations • Implications and Consequences of Big Data *6. Analysing Data* • Frequency Tables and the Mean • Frequency Tables, Median and Mode • Frequency Tables with Grouped Data • Outliers • Clusters and Outliers *7. Online Worksheets* 1. Introduction to Data • Introduction to Data Collection Practice • Data Collection Methods Practice • Surveys and Simulations Practice • Experiment and Observation Practice • Introduction to Data Methods Mixed Practice 2. Measures of Centre and Spread • The Mean Practice • The Median Practice • The Mode Practice • Comparing Measures of Centre Practice • The Range Practice • Calculating Measures of Centre and Spread Practice • Mean, Median and Mode Mixed Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in ***6. Statistics*** *(continued from previous page)*	
	3. Displaying Data • Displaying Data Practice • Pick Your Display Method Practice • Dot Plots and Column Graphs Practice • Histograms Practice • Pie Charts and Divided Bar Graphs Practice • Stem and Leaf Plots Practice • Line Graphs Practice 4. Collecting Data • Collecting Data Mixed Practice • Random Sampling Practice • Bias Practice • Surveys Practice 5. Analysing Data • Frequency Tables and the Mean Practice • Frequency Tables, Median and Mode Practice • Frequency Tables with Grouped Data Practice • Outliers Practice • Clusters and Outliers Practice • Analysing Data Mixed Practice	*8. Further Resources* Spelling and Definitions • Definitions List: Data Representation and Interpretation • Definitions MCQ: Data Representation and Interpretation • Spelling List: Data Representation and Interpretation Topic Tests • Collecting Data • Data Displays • Investigating and Analysing Data

Year 08 Pre-Tests and Post-Tests

Content Descriptor/s	EP Lessons	
	1. Pre-Tests • Year 08 Number Pre-Test • Year 08 Algebra Pre-Test • Year 08 Measurement Pre-Test • Year 08 Geometry Pre-Test • Year 08 Chance Pre-Test • Year 08 Data Pre-Test	*2. Post-Tests* • Year 08 Algebra Post-Test • Year 08 Chance Post-Test • Year 08 Data Post-Test • Year 08 Geometry Post-Test • Year 08 Measurement Post-Test • Year 08 Number Post-Test

Year 9

Number

Content Descriptor/s	EP Lessons in ***Indices***	
AC9M9A01 apply the exponent laws to numerical expressions with integer exponents and extend to variables AC9M9M02 solve problems involving very small and very large measurements, time scales and intervals expressed in scientific notation	*1. Prior Learning* • Multiplying and Dividing Indices • Powers of Powers and Multiplied Terms • The Power of Zero • Practising the Index Laws *2. Index Laws with Integer Bases* • Multiplying Indices • Dividing Indices • Powers of Powers • Powers of Multiplied Terms • The Power of Zero • Applying Index Laws • Positive and Negative Integer Indices • Fractional Indices *3. Index Laws with Variables* • Multiplying Powers • Dividing Powers • The Zero Index • Powers as the Base of Another Power • Multiplication as the Base of a Power • Division as the Base of a Power *4. Scientific Notation* • Introduction to Scientific Notation (Standard Form) - Large Numbers • Introduction to Scientific Notation (Standard Form) - Small Numbers	• Ordering Numbers and Estimating Calculations in Scientific Notation (Standard Form) • Adding and Subtracting with Scientific Notation (Standard Form) • Multiplying and Dividing in Scientific Notation (Standard Form) • Significant Figures and Scientific Notation (Standard Form) • Representing Very Large and Very Small Units *5. Online Worksheets* 1. Indices • Applying Index Laws Practice • Positive Integer Indices Practice • Negative Integer Indices Practice • Fractional Indices Practice 2. Index Laws with Variables • Multiplying Powers Practice • Dividing Powers Practice • The Zero Index Practice • Powers as the Base of Another Power Practice • Multiplication as the Base of a Power Practice • Division as the Base of a Power Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in ***Indices*** *(continued from previous page)*	
	6. Further Resources Spelling and Definitions • Definitions List: Real Numbers • Definitions List: Scientific Notation • Definitions MCQ: Real Numbers • Spelling List: Real Numbers Topic Tests • Index Laws • Numbers of Any Magnitude	

Algebra

Content Descriptor/s	EP Lessons in ***1. Algebraic Techniques***	
AC9M9A01 apply the exponent laws to numerical expressions with integer exponents and extend to variables AC9M9A02 simplify algebraic expressions, expand binomial products and factorise monic quadratic expressions	*1. Prior Learning* • Expanding Algebraic Expressions • Factorising Algebraic Expressions • Simplifying Algebraic Expressions *2. Simplifying and Evaluating Expressions* • Simplifying Addition and Subtraction • Simplifying Multiplication and Division • Evaluating Algebraic Expressions *3. Expanding* • Expanding and the Distributive Law • Expanding Binomial Products • Expanding Perfect Squares • Expanding Differences of Two Squares *4. Factorising* • Connecting Expanding and Factorising • Identifying Algebraic Factors • Identifying Complicated Algebraic Factors • Factorising • Factorisation Patterns • Factorising Quadratic Expressions	*5. Online Worksheets* 1. Expanding • Expanding and the Distributive Law Practice • Expanding Binomial Products Practice • Expanding Perfect Squares Practice • Expanding Differences of Two Squares Practice 2. Factorising • Connecting Expanding and Factorising Practice • Identifying Algebraic Factors Practice • Identifying Complicated Algebraic Factors Practice • Factorising Practice • Factorisation Patterns Practice • Factorising Quadratic Expressions Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in ***1. Algebraic Techniques (continued from previous page)***	
	6. Further Resources Spelling and Definitions • Definitions List: Patterns and Algebra • Definitions MCQ: Patterns and Algebra • Spelling List: Patterns and Algebra	
Content Descriptor/s	**EP Lessons in *2. Linear and Non-Linear Relations***	
AC9M9A03 find the gradient of a line segment, the midpoint of the line interval and the distance between 2 distinct points on the Cartesian plane AC9M9A04 identify and graph quadratic functions, solve quadratic equations graphically and numerically, and solve monic quadratic equations with integer roots algebraically, using graphing software and digital tools as appropriate AC9M9A05 use mathematical modelling to solve applied problems involving change including financial contexts; formulate problems, choosing to use either linear or quadratic functions; interpret solutions in terms of the situation; evaluate the model and report methods and findings AC9M9A06 experiment with the effects of the variation of parameters on graphs of related functions, using digital tools, making connections between graphical and algebraic representations, and generalising emerging patterns	*1. Prior Learning* • Cartesian Planes • Linear Graphs • Reading Graphs • Solving Simple Linear Equations • Rearranging Linear Equations *2. Coordinate Geometry* • Line Segments on Cartesian Planes • Distance and Pythagoras' Theorem • Gradient of a Line Segment • Midpoint of a Line Segment • Applications of Coordinate Geometry: Distance • Applications of Coordinate Geometry: Gradient • Applications of Coordinate Geometry: Midpoint *3. Linear Graphs* • Features of Graphs • 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 • Plotting and Reading Travel Graphs • Analysing Travel Graphs • Water Evaporation Graphs *4. Non-Linear Relationships* Introduction to Parabolas • Transforming Parabolas • Circles • Solving Non-Linear Equations • Linear and Non-Linear Lines *5. Solving Linear Equations* • Rearranging Equations • Solving Using Algebraic Methods • Solving Using Graphical Methods • Non-Integer Solutions to Linear Equations • Applications of Linear Equations *6. Further Resources* Extension • Extension: Multiple Lines on Cartesian Planes • Extension: Plotting Linear Equations in Context ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *2. Linear and Non-Linear Relations (continued from previous page)*	
	Spelling and Definitions • Definitions MCQ: Linear and Non-Linear Relationships • Spelling List: Linear and Non-Linear Relationships • Spelling List: Linear and Non-Linear Relationships Topic Tests • Linear Patterns and Equations • Non-Linear Relationships	

Measurement

Content Descriptor/s	EP Lessons in *1. Measurement*	
AC9M9M01 solve problems involving the volume and surface area of right prisms and cylinders using appropriate units	*1. Prior Learning* • Area • Area of Circles • Volume • Converting Units of Capacity • Area of Rectangles and Squares • Area of Triangles • Area of Parallelograms • Area of Rhombuses and Kites • Area of Trapeziums • Area of Composite Shapes I • Area of Composite Shapes II • Activity: Making Objects Using Cubes *2. Surface Area* • Surface Area of Prisms • Surface Area of Cylinders • Composite Shapes and Solids	*3. Volume and Capacity* • Types of Prisms • Rectangular Prisms • Calculating Volume of Rectangular Prisms • Volume of Composite Shapes • Calculating Volume of Other Regular and Irregular Prisms • Calculating Volume of Triangular Prisms • Calculating Volume of Cylinders • Converting between Capacity and Volume • Calculating Volume and Capacity ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	**EP Lessons in *1. Measurement (continued from previous page)***	
	4. Online Worksheets 1. Area • Area of Parallelograms Practice • Area of Rhombus and Kites Practice • Area of Trapeziums Practice • Area Mixed Practice 2. Surface Area • Surface Area Practice • Surface Area of Cylinders Practice • Surface Area Mixed Practice 3. Volume and Capacity • Volume Practice • Calculating Capacity Practice • Converting Units of Capacity Practice • Converting Volume and Capacity Practice • Volume and Capacity Mixed Practice	*5. Further Resources* Spelling and Definitions • Definitions List: Units of Measurement • Definitions MCQ: Units of Measurement • Spelling List: Using Units of Measurement Topic Tests • Area and Surface Area • Calculating Volume
Content Descriptor/s	**EP Lessons in *2. Time***	
AC9M9M02 solve problems involving very small and very large measurements, time scales and intervals expressed in scientific notation	• Time Scales *Online Worksheets* • Time Scales Practice	
Content Descriptor/s	**EP Lessons in *3. Spatial Problems***	
AC9M9M03 solve spatial problems, applying angle properties, scale, similarity, Pythagoras' theorem and trigonometry in right-angled triangles	*1. Prior Learning* • Transformations • Congruence of Triangles • Congruence of Quadrilaterals • Angles • Triangles • Squares and Square Roots • Algebraic Substitution and Evaluation • Solving Equations	*2. Angles* • Angles and Triangles • Angles and Quadrilaterals • Angles and Congruence *3. Similarity* • Introduction to Similarity • Similarity Tests • Similarity and Angles • Similarity and Multiple Triangles ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *3. Spatial Problems (continued from previous page)*	
	4. Scaling • Introduction to Scaling • Scaling on Cartesian Planes • Magnitude • Magnitude as a Ratio *5. Pythagoras' Theorem* • Parts of a Triangle and the Hypotenuse • Pythagoras' Theorem *6. Trigonometry* • Introduction to Trigonometry • Finding Side Lengths Using Trigonometry • Finding Angles Using Trigonometry • Review Lesson: Trigonometric Ratios *7. Online Worksheets* 1. Angles • Angles in a Triangle Practice • Angles and Quadrilaterals Practice • Angles and Congruence Practice 2. Similarity • Introduction to Similarity Practice • Similarity Tests Practice • Similarity and Angles Practice • Similarity and Multiple Triangles Practice 3. Scaling • Introduction to Scaling Practice • Scaling on Cartesian Planes Practice • Magnitude Practice • Magnitude as a Ratio Practice	*8. Further Resources* Extended Investigations • Building with Pythagoras Hands-On Activities • Applications of Trigonometry in Coding Maths in Context • Mind-Boggling Paradoxes (Year 8-10) Real World Applications • Using Trigonometric Functions in Real World Applications • Using Inverse Trigonometric Functions in Real World Applications Spelling and Definitions • Definitions List: Geometry • Definitions MCQ: Geometry Definitions • Spelling List: Geometric Reasoning • Definitions List: Pythagoras and Trigonometry • Definitions MCQ: Pythagoras and Trigonometry • Spelling List: Pythagoras and Trigonometry Topic Tests • Angles • Pythagoras' Theorem • Right-Angle Triangles

Content Descriptor/s	EP Lessons in *4. Mathematical Modelling*	
AC9M9M05 use mathematical modelling to solve practical problems involving direct proportion, rates, ratio and scale, including financial contexts; formulate the problems and interpret solutions in terms of the situation; evaluate the model and report methods and findings	*1. Proportion* • Introduction to Graphs • Direct Proportion • Introduction to Inverse Proportion • Applying Inverse Proportion • Analysing Graphs *2. Rates* • Constant Rates • Reading Constant Rates • Drawing Constant Rates • Variable Rates • Rates of Change • Analysing Rates of Change	*3. Online Worksheets* 1. Proportion • Introduction to Graphs Practice • Direct Proportion Practice • Introduction to Inverse Proportion Practice • Applying Inverse Proportion Practice 2. Rates • Constant Rates Practice • Variable Rates Practice • Rates of Change Practice

Space

Content Descriptor/s	EP Lessons in *1. The Enlargement Transformation*	
AC9M9SP02 apply the enlargement transformation to shapes and objects using dynamic geometry software as appropriate; identify and explain aspects that remain the same and those that change	• Introduction to Scaling and Enlargement • The Enlargement Transformation • The Enlargement Transformation Practice • Map Projections: A Matter of Perspective (Y5 - 10)	
Content Descriptor/s	**EP Lessons in *2. Pythagoras and Trigonometry***	
AC9M9SP01 recognise the constancy of the sine, cosine and tangent ratios for a given angle in right-angled triangles using properties of similarity	*1. Trigonometric Ratios* • Trigonometric Ratios • Finding Angles Using Trigonometric Ratios • Finding Side Lengths Using Trigonometric Ratios • Trigonometric Ratios and Complementary Triangles • Review Lesson: Trigonometric Rules	*2. Further Resources* Extended Investigations • Building with Pythagoras Hands On Activities • Applications of Trigonometry in Coding Real World Applications • Using Trigonometric Functions in Real World Applications • Using Inverse Trigonometric Functions in Real World Applications

Probability

Content Descriptor/s	EP Lessons in *5. Probability*	
AC9M9P01 list all outcomes for compound events both with and without replacement, using lists, tree diagrams, tables or arrays; assign probabilities to outcomes AC9M9P02 calculate relative frequencies from given or collected data to estimate probabilities of events involving “and”, inclusive “or” and exclusive “or”	*1. Prior Learning* • Introduction to Probability • Complementary Events • Describing Probabilities • Venn Diagrams • Two-Way Tables • Converting Between Venn Diagrams and Two-Way Tables *2. Two-Step Experiments* • Introduction to Two-Step Experiments • Tree Diagrams • Using Tree Diagrams • Arrays • Using Arrays *3. 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 4. Experimental Probability • Relative Frequencies • Using Relative Frequencies • Representing Distributions Using Percentages *5. Online Worksheets* 1. Two-Step Experiments • Introduction to Two-Step Chance Practice • Tree Diagrams Practice	• Using Tree Diagrams Practice • Arrays Practice • Using Arrays Practice 2. Venn Diagrams and Two-Way Tables • Venn Diagrams Practice • Calculating Probabilities from Venn Diagrams Practice • Two-Way Tables Practice • Calculating Probabilities from Two-Way Tables Practice • Calculating Probabilities from Chance Diagrams Practice • Filling in Chance Diagrams using Partial Information Practice 3. Experimental Probability • Relative Frequencies Practice • Using Relative Frequencies Practice *6. Further Resources* Maths in Context • Matching Malaria with Mathematics (Year 9-10) • Unfortunate Events (Year 5-10) Spelling and Definitions • Definitions List: Chance • Definitions MCQ: Chance • Spelling List: Chance Topic Tests • Venn Diagrams and Two-Way Tables

Statistics

Content Descriptor/s	EP Lessons in *6. Statistics*	
AC9M9ST03 represent the distribution of multiple data sets for numerical variables using comparative representations; compare data distributions with consideration of centre, spread and shape, and the effect of outliers on these measures AC9M9ST04 choose appropriate forms of display or visualisation for a given type of data; justify selections and interpret displays for a given context	*1. Prior Learning* • Measures of Centre and Spread • Frequency Tables • Sampling *2. Data Sources and Types* • Primary and Secondary Data • Types of Data *3. Shape and Spread in Data* • Shape and Mode • Symmetry and Skew in Data • Effect of Shape on Mean and Median • Measures of Centre in Grouped Data • Finding Measures of Centre and Spread *4. Comparing Data* • Comparing Data Sets • Back-to-Back Stem and Leaf Plots • Comparing Dot Plots • Comparing Histograms *5. Online Worksheets* 1. Data Sources and Types • Primary and Secondary Data Practice • Types of Data Practice • Data Sources Mixed Practice 2. Shape and Spread of Data • Shape and Mode Practice • Symmetry and Skew in Data Practice • Effect of Shape on Mean and Median Practice • Measures of Centre in Grouped Data Practice • Shape and Spread in Data Mixed Practice	3. Comparing Data • Comparing Data Sets Practice • Back-to-Back Stem and Leaf Plots Practice • Comparing Dot Plots Practice • Comparing Histograms Practice *6. Further Resources* Spelling and Definitions • Definitions List: Data Representation and Interpretation • Definitions MCQ: Data Representation and Interpretation • Spelling List: Data Representation and Interpretation Topic Tests • Analysing and Comparing Data

Year 09 Pre-Tests and Post-Tests

Content Descriptor/s	EP Lessons	
	1. Pre-Tests • Year 09 Algebra Pre-Test • Year 09 Chance Pre-Test • Year 09 Data Pre-Test • Year 09 Geometry Pre-Test • Year 09 Measurement Pre-Test • Year 09 Number Pre-Test	*2. Post-Tests* • Year 09 Algebra Post-Test • Year 09 Chance Post-Test • Year 09 Data Post-Test • Year 09 Geometry Post-Test • Year 09 Measurement Post-Test • Year 09 Number Post-Test

Year 10

Number

Content Descriptor/s	EP Lessons in *1. Real Number*	
AC9M10N01 recognise the effect of using approximations of real numbers in repeated calculations and compare the results when using exact representations	*1. Surds* • Introduction to Surds • Index Laws and Fractional Powers • Multiplying and Dividing Surds • Simplifying Surds • Adding and Subtracting Surds • Expanding Surds • Conjugate and Perfect Square Surds • Rationalising Denominators Further Resources 1. Problem Solving • Applications of Surds 2. Spelling and Definitions • Spelling List: Real Numbers	

Algebra

Content Descriptor/s	EP Lessons in *1. Algebraic Techniques*	
AC9M10A01 expand, factorise and simplify expressions and solve equations algebraically, applying exponent laws involving products, quotients and powers of variables, and the distributive property	*1. Prior Learning* • Expanding • Factorising • Index Laws: Multiplication and Division • Index Laws: Stacked Powers and the Zero Index • Evaluating Expressions and Using Formulas • Fractional Indices • Simplifying Addition and Subtraction • Simplifying Multiplication and Division *2. Algebraic Expressions* • Simplifying Algebraic Products with Index Laws • Simplifying Algebraic Quotients with Index Laws • Adding Algebraic Fractions • Subtracting Algebraic Fractions • Multiplying Algebraic Fractions • Dividing Algebraic Fractions *3. Expanding and Factorising* • Expanding and the Distributive Law • Identifying Common Factors • Identifying Common Factors with Indices • Factorising • Factorising with Index Laws • Factorisation by Grouping *4. Using Formulas* • Using Formulas • Rearranging and Solving Equations	*5. Solving Linear Equations* • Word Problems • Rearranging and Solving Equations • Solving Word Problems • Using Formulas • Rearranging and Solving Equations from Formulas *6. Online Worksheets* 1. Algebraic Fractions • Simplifying Algebraic Products with Index Laws Practice • Simplifying Algebraic Quotients with Index Laws Practice • Adding Algebraic Fractions Practice • Subtracting Algebraic Fractions Practice • Multiplying Algebraic Fractions Practice • Dividing Algebraic Fractions Practice • Cancelling Common Factors Practice • Algebraic Fractions Extended Practice 2. Expanding and Factorising • Identifying Common Factors Practice • Factorising with Index Laws Practice • Factorisation by Grouping Practice 3. Using Formulas • Using Formulas Practice • Solving Equations Practice 4. Solving Linear Equations • Word Problems Practice • Rearranging and Solving Equations Practice • Solving Word Problems Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	**EP Lessons in *1. Algebraic Techniques(continued from previous page)***	
	7. Further Resources Maths in Context • Matching Malaria with Mathematics (Year 9-10) • The Mathematics of the Guitar (Year 9-10)	Spelling and Definitions • Definitions List: Patterns and Algebra • Definitions MCQ: Patterns and Algebra • Spelling List: Patterns and Algebra Topic Tests • Algebraic Fractions
Content Descriptor/s	**EP Lessons in *2. Linear Relations***	
AC9M10A02 solve linear inequalities and simultaneous linear equations in 2 variables; interpret solutions graphically and communicate solutions in terms of the situation AC9M10A05 experiment with functions and relations using digital tools, making and testing conjectures and generalising emerging patterns	*1. Prior Learning* • Linear Graphs • Linear Equations • Finding the Gradient of a Line Segment • Finding the Length of a Line Segment • Finding the Midpoint of a Line Segment *2. Parallel and Perpendicular Lines* • Parallel Lines • Perpendicular Lines *3. Solving Simultaneous Linear Equations* • Using Graphs to Solve Simultaneous Equations • Using Elimination to Solve Simultaneous Equations • Using Substitution to Solve Simultaneous Equations *4. Linear Inequalities* • Introduction to Inequalities • Rearranging Inequalities • Solving Inequalities • Chained Inequalities • Review Lesson: Inequalities	*5. Online Worksheets* 1. Parallel and Perpendicular Lines • Parallel Lines Practice • Perpendicular Lines Practice 2. Solving Simultaneous Linear Equations • Using Graphs to Solve Simultaneous Equations Practice • Using Substitution to Solve Simultaneous Equations Practice • Using Elimination to Solve Simultaneous Equations Practice *6. Further Resources* Maths in Context • Predictions Without a Theory: Empirical Equations (Year 9-10) Spelling and Definitions • Definitions List: Linear and Non-Linear Relationships • Definitions MCQ: Linear and Non-Linear Relationships • Spelling List: Linear and Non-Linear Relationships Topic Tests • Linear Relationships • Simplifying Algebraic Products and Integer Indices

Content Descriptor/s	EP Lessons in *3. Further Algebraic Techniques*	
AC9M10A01 expand, factorise and simplify expressions and solve equations algebraically, applying exponent laws involving products, quotients and powers of variables, and the distributive property	*1. Expanding and Factorising* • Expanding Binomial Products • Factorising Quadratic Trinomials • Monic Factorisation • Non-Monic Factorisation • Factorising Differences of Two Squares • Factorising by Completing the Square *2. Solving Quadratic Equations* • Solving Quadratic Equations Using Technology • Guess and Check • Solving Monic Quadratic Equations • Solving Non-Monic Quadratic Equations • The Quadratic Formula • Completing the Square: Method 1 - Using Rearrangement • Completing the Square: Method 2 - Using Differences of Two Squares • Solving Quadratic Equations by Completing the Square • Grouping • Writing Quadratic Equations *3. Solving Quadratic Inequalities* • Solving Quadratic Inequalities	*4. Online Worksheets* 1. Expanding and Factorising • Expanding Binomial Products Practice • Expanding to Trinomials Practice • Factorising Quadratic Trinomials Practice • Factorising Perfect Squares Practice • Factorising Differences of Two Squares Practice • Factorising by Completing the Square Practice 2. Solving Quadratic Equations • Solving Quadratic Equations Using Technology Practice • Guess and Check Practice • The Quadratic Formula Practice • Completing the Square Using Differences of Two Squares Practice • Solving Quadratic Equations by Completing the Square Practice • Grouping Practice *5. Further Resources* Topic Test • Solving Quadratic Equations

Content Descriptor/s	**EP Lessons in *4. Financial Contexts***	
AC9M10A04 use mathematical modelling to solve applied problems involving growth and decay, including financial contexts; formulate problems, choosing to apply linear, quadratic or exponential models; interpret solutions in terms of the situation; evaluate and modify models as necessary and report assumptions, methods and findings	*1. Prior Learning* • Income and Tax • Simple Interest *2. Compound Interest* • Compound Interest Basic Formula • Rearranging the Compound Interest Formula • Compound Interest - Months and Weeks • Rearranging Compound Interest - Months and Weeks *2. Online Worksheets* • Compound Interest Basic Formula Practice • Rearranging the Compound Interest Basic Formula Practice • Compound Interest - Months and Weeks Practice	*3. Further Resources* Maths in Context • Cryptocurrency (Year 9-10) • Hyperinflation: The Ever-Expanding Topic (Year 9-10) Problem Solving • Term Deposit • Mortgage • Retirement Spelling and Definitions • Definitions List: Finance • Definitions MCQ: Finance • Spelling List: Money and Financial Mathematics Topic Tests • Compound Interest
Content Descriptor/s	**EP Lessons in *5. Quadratic and Other Graphs***	
AC9M10A03 recognise the connection between algebraic and graphical representations of exponential relations and solve related exponential equations, using digital tools where appropriate AC9M10A05 experiment with functions and relations using digital tools, making and testing conjectures and generalising emerging patterns	*1. Quadratic Graphs* • Introduction to Parabolas • Transforming Parabolas • Transforming Parabolas - Dilation and Reflection • Transforming Parabolas - Translation *2. Exponential Relations* • Introduction to Exponential Functions • Solving Exponential Equations • Exponential Graphs • Equations and Graphs of Exponential Relationships	*3. Other Graphs* • Circles • Circle Graphs • Transforming Circles • Exponential Graphs • Hyperbola Graphs • Hyperbola Graph Transformations *4. Online Worksheets* 1. Quadratic Graphs • Parabolas Practice • Transforming Parabolas Practice • Transforming Parabolas - Dilation and Reflection Practice • Transforming Parabolas - Translation Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *5. Quadratic and Other Graphs (continued from previous page)*	
	2. Other Graphs • Circles Practice • Transforming Circles Practice • Exponential Graphs Practice	*4. Further Resources* Topic Test • Transforming Parabolas
Content Descriptor/s	**EP Lessons in *6. Post-Year 10 Pathways Supporting Resources***	
	1. Trigonometry 1. Defining and Graphing Trigonometric Functions • The Unit Circle and Radians • Understanding and Graphing Sine • Understanding and Graphing Cosine • Understanding and Graphing Tangent • Comparing Trigonometric Functions 2. Trigonometric Rules • The Sine Rule • Finding Angles Using the Sine Rule • The Sine Rule: The Ambiguous Case • The Cosine Rule • Finding Angles Using the Cosine Rule • Review Lesson: Trigonometric Rules 3. Area of a Triangle • Area of a Triangle: ½ ab sin C • Heron's Formula 4. Solving Simple Trigonometric Equations • Special Triangles: 30-60-90 • Special Triangles: 45-45-90 • Trigonometric Ratios and Complementary Angle	*2. Polynomials* 1. Polynomials • Introduction to Polynomials • Evaluating Polynomials • Adding, Subtracting and Multiplying Polynomials • Dividing Polynomials • The Remainder Theorem • The Factor Theorem 2. Polynomial Graphs • Features of Polynomial Graphs • Features of Graphs - Roots • Parabolas • Parabola Transformations • Multiple Transformations of Parabolas • Cubics • Cubic Transformations • Expanding Cubic Expressions • Quartics 3. Online Worksheets • Introduction to Polynomials Practice • Evaluating Polynomials Practice • Adding, Subtracting and Multiplying Polynomials Practice • Dividing Polynomials Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in ***6. Post-Year 10 Pathways Supporting Resources (continued from previous page)***	
	• The Remainder Theorem Practice • The Factor Theorem Practice • Factorising Cubic Polynomials Practice • Factorising Quartic Polynomials Practice • Solving Polynomials Practice 4. Further Resources Maths in Context • Fractal Trees and Recursion (Year 7-10) • Patterns Found in Nature (Year 5-10)	Spelling and Definitions • Definitions List: Patterns and Algebra • Definitions MCQ: Patterns and Algebra • Spelling List: Patterns and Algebra Topic Tests • Topic Test: Polynomials *3. Functions* • Introduction to Functions • Function Notation • Inverse Functions and Transformations • Non-Linear Simultaneous Equations

Measurement

Content Descriptor/s	EP Lessons in ***1. Surface Area and Volume***	
AC9M10M01 solve problems involving the surface area and volume of composite objects using appropriate units	*1. Prior Learning* • Area • Area of Circles • Volume *2. Surface Area* • Area of Composite Shapes • Surface Area of Cylinders • Surface Area of Prisms • Surface Area of Complex Solids • Surface Area of Composite Solids • Surface Area of Right Pyramids • Surface Area of Right Cones • Finding the Height of Right Pyramids • Surface Area of Spheres	*3. Volume* • Rectangular Prisms • Types of Prisms • Calculating Volume of Rectangular Prisms • Calculating Volume of Triangular Prisms • Calculating Volume of Cylinders • Calculating Volume of Other Regular and Irregular Prisms • Volume of Composite Solids • Volume of Right Pyramids • Volume of Right Cones • Volume of Spheres ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	**EP Lessons in *1. Surface Area and Volume (continued from previous page)***	
	4. Online Worksheets 1. Surface Area • Area of Circles Practice • Area of Composite Shapes Practice • Surface Area of Cylinders Practice • Surface Area of Prisms Practice • Surface Area of Complex Solids Practice • Surface Area Mixed Practice 2. Volume • Volume Practice • Volume of Composite Solids Practice • Volume Mixed Practice	*5. Further Resources* Spelling and Definitions • Definitions List: Units of Measurement • Definitions MCQ: Units of Measurement • Spelling List: Using Units of Measurement Topic Tests • Surface Area
Content Descriptor/s	**EP Lessons in *2. Pythagoras' Theorem and Trigonometry***	
AC9M10M03 solve practical problems applying Pythagoras' theorem and trigonometry of right-angled triangles, including problems involving direction and angles of elevation and depression	*1. Prior Learning* • Pythagoras' Theorem • Trigonometric Ratios *2. Pythagoras' Theorem in 3D* • Pythagoras' Theorem in 3D *3. Application of Trigonometry* • Bearings with Right-Angled Triangles • Angles of Elevation and Depression • Trigonometry in 3D • 3D Problems Using Right-Angled Triangles *4. Further Resources* Extended Investigations • Building with Pythagoras • Pirates' Treasure • Airplane Flight Paths Problem Solving • Forestry Subdivision • Balloons Over Waikato	Spelling and Definitions • Definitions List: Pythagoras and Trigonometry • Definitions MCQ: Pythagoras and Trigonometry • Spelling List: Pythagoras and Trigonometry Topic Tests • Inverse Trig, Bearings and Elevation

Content Descriptor/s	EP Lessons in *3. Logarithmic Scales*	
AC9M10M02 interpret and use logarithmic scales in applied contexts involving small and large quantities and change	*1. Logarithms* • Introduction to Logarithms • Logarithmic Scales • Deriving the Laws of Logarithms • Using the Laws of Logarithms • Combining Log Laws	*2. Exponentials* • Solving Exponential Equations • Applications of Exponential Equations

Space

Content Descriptor/s	EP Lessons in *1. Geometry*	
AC9M10SP01 apply deductive reasoning to proofs involving shapes in the plane and use theorems to solve spatial problems	*1. Prior Learning* • Angles and Triangles • Similarity and Multiple Triangles • Angles and Quadrilaterals • Congruence • Using Congruence to Determine Angles in Triangles • Introduction to Scaling • Magnitude • Magnitude as a Ratio • Scaling on Cartesian Planes • Introduction to Similarity • Similarity Tests • Similarity and Angles *2. Geometric Reasoning* • Scaling and Measurement • Polygons and Interior Angles • Polygons and Exterior Angles • Showing Congruence • Showing Similarity *3. Proofs* • Introduction to Proofs and Logic • Angle Proofs • Rectangle and Square Proofs • Parallelogram and Rhombus Proofs	*4. Online Worksheets* 1. Geometric Reasoning • Scaling Perimeter Practice • Scaling Circles Practice • Scaling Area Practice • Polygons and Interior Angles Practice • Polygons and Exterior Angles Practice • Showing Congruence Practice • Showing Similarity Practice 2. Proofs • Introduction to Proofs and Logic Practice • Angle Proofs Practice • Rectangle and Square Proofs Practice • Parallelogram and Rhombus Proofs Practice *5. Further Resources* Spelling and Definitions • Definitions List: Geometric Reasoning • Definitions MCQ: Geometric Reasoning • Spelling List: Geometric Reasoning Topic Tests • Proofs

Content Descriptor/s	EP Lessons in *2. Post-Year 10 Pathways Supporting Resources*	
	Circle Geometry 1. Angle Theorems for Circles • Central Angle Theorem • Proof: Central Angle Theorem • Angles Subtended by the Same Arc • Thales' Theorem: Angles in a SemicircleProving Thales' Theorem • Cyclic Quadrilaterals 2. Circle Geometry • Equal Length Chord Properties • Perpendicular Bisector to Chords • Tangents, Secants and the Alternate Segment Theorem • Intersecting Chords, Secants and Tangents	3. Further Resources Maths in Context • Mind-Boggling Paradoxes (Year 8-10) Spelling and Definitions • Definitions List: Geometric Reasoning • Definitions MCQ: Geometric Reasoning • Spelling List: Geometric Reasoning

Probability

Content Descriptor/s	EP Lessons in *5. Probability*	
AC9M10P01 use the language of "if .... then", "given", "of", "knowing that" to describe and interpret situations involving conditional probability AC9M10P02 design and conduct repeated chance experiments and simulations using digital tools to model conditional probability and interpret results	*1. Prior Learning* • Tree Diagrams • Arrays • Venn Diagrams • Two-Way Tables • Experimental Probability *2. Multi-Step Experiments* • Arrays • Probabilities and Three-Step Experiments • Building Three-Step Tree Diagrams • Tree Diagrams with Unequal Outcomes • Probabilities of Unequal Outcomes • Three-Step Experiments and Unequal Outcomes	*3. Conditional Probability* • Introduction to Conditional Probability • Investigating Conditional Probability with Venn Diagrams • Investigating Conditional Probability with Two-Way Tables • Calculating Conditional Probability Using Tree Diagrams • Calculating Conditional Probabilities using Arrays • Word Problems ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *5. Probability (continued from previous page)*	
	4. Independent Events • Introduction to Independence • Investigating Independent Events using Chance Diagrams • Independent and Dependent Events *5. Sampling* • What is Sampling? • Types of Sampling: Probability Sampling • Types of Sampling: Non-Probability Sampling • Sampling Errors • Analysing Sampling in Reports *6. Online Worksheets* 1. Multi-Step Experiments • Arrays Practice • Probabilities and Three-Step Experiments Practice • Building Three-Step Tree Diagrams Practice • Tree Diagrams with Unequal Outcomes Practice • Probabilities of Unequal Outcomes Practice • Three-Step Experiments and Unequal Outcomes Practice	2. Conditional Probability • Introduction to Conditional Probability Practice • Investigating Conditional Probability with Venn Diagrams Practice • Investigating Conditional Probability with Two-Way Tables Practice • Calculating Conditional Probability Using Tree Diagrams Practice • Calculating Conditional Probabilities Using Arrays Practice • Word Problems Practice 3. Independent Events • Introduction to Independence Practice • Investigating Independent Events using Chance Diagrams Practice *7. Further Resources* Maths in Context • Unfortunate Events (Year 5-10) Spelling and Definitions • Definitions List: Chance • Definitions MCQ: Chance • Spelling List: Chance Topic Tests • Conditional Probability

Statistics

Content Descriptor/s	EP Lessons in *6. Statistics*	
AC9M10ST01 analyse claims, inferences and conclusions of statistical reports in the media, including ethical considerations and identification of potential sources of bias AC9M10ST02 compare data distributions for continuous numerical variables using appropriate data displays including boxplots; discuss the shapes of these distributions in terms of centre, spread, shape and outliers in the context of the data AC9M10ST03 construct scatterplots and comment on the association between the 2 numerical variables in terms of strength, direction and linearity AC9M10ST05 plan and conduct statistical investigations of situations that involve bivariate data; evaluate and report findings with consideration of limitations of any inferences	*1. Prior Learning* • Data Sources • Measures of Centre and Spread • Shape in Data • Comparing Data Sets and Back-to-Back Stem and Leaf Plots • Comparing Dot Plots and Histograms • Introduction to Spreadsheets *2. Box and Whisker Plots* • Introduction to Box and Whisker Plots • Range • Quartiles and Interquartile Range • Five Point Summary • Building Box and Whisker Plots • Comparing Box and Whisker Plots • Box and Whisker Plots, Histograms and Dot Plots *3. Bivariate Data* • Bivariate Variables • Introduction to Bivariate Data • Plotting Using a Calculator • Plotting Using a Spreadsheet • Analysing Trend by Eye • Cleaning Bivariate Data *4. Lines of Best Fit* • Lines of Best Fit by Eye • Least Squares Fitting using a Calculator • Least Squares Fitting using a Spreadsheet • Making Predictions by Eye • Making Predictions Using the Equation	• Testing Regression Models Using A Calculator • Testing Regression Models Using A Spreadsheet *5. Time Series* • Introduction to Time Series • Analysing Time Series *6. Statistical Reports* • Evaluating Statistical Reports and Claims: Data Collection • Evaluating Statistical Reports and Claims: Data Reporting • Evaluating Statistical Graphs: Making our Graph • Evaluating Statistical Graphs: the Shape of the Graph • Misleading Reports • Statistics in Organisations • Statistical Inquiry • The Statistical Enquiry Cycle *7. Online Worksheets* 1. Box and Whisker Plots • Box and Whisker Plots Practice • Range Practice • Quartiles Practice • Interquartile Range Practice • Five Point Summary Practice • Plotting Box and Whisker Plots Practice • Comparing Box and Whisker Plots Practice • Box and Whisker Plots, Histograms and Dot Plots Practice ***Resources continue on next page***

Content Descriptor/s *(see previous page)*	EP Lessons in *6. Statistics (continued from previous page)*	
	8. Further Resources Spelling and Definitions • Definitions List: Data Representation and Interpretation • Definitions MCQ: Data Representation and Interpretation • Spelling List: Data Representation and Interpretation Topic Tests • Bivariate Data Analysis • Data Sources and Statistical Reports • Lines of Best Fit • Single Variable Data 2. Statistical Reports • Evaluating Statistical Reports and Claims: Data Collection Practice • Evaluating Statistical Reports and Claims: Data Reporting Practice • Evaluating Statistical Graphs: Making our Graph Practice • Shape of the Graph Practice	*9. Post-Year 10 Pathways Supporting Resources* 1. Standard Deviation • Mean and Standard Deviation • Calculating Standard Deviation • Calculating Standard Deviation Using Technology • Investigating the Standard Deviation • Using the Standard Deviation to Compare Data Sets • Comparing the Measures of Spread 2. Online Worksheets • Introduction to Standard Deviation Practice • Calculating the Standard Deviation Practice • Calculating the Standard Deviation Using Technology Practice • Using the Standard Deviation to Compare Data Sets Practice 3. Further Resources Topic Tests • Standard Deviation

Year 10 Pre-Tests

Content Descriptor/s	EP Lessons	
	• Year 10 Algebra Pre-Test • Year 10 Chance Pre-Test • Year 10 Data Pre-Test • Year 10 Geometry Pre-Test • Year 10 Measurement Pre-Test • Year 10 Number Pre-Test	