Mathletics

Western Australian Curriculum

Activities (Courses) and Skill Quests

Years 7-8

March, 2026

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March, 2026

Year 7

Number & algebra

Understanding number

Explore and represent equivalent fractions with related and unrelated denominators, visually and numerically.	
Activities	
Fractions, decimals & percentages	Selecting Equivalent Fractions
	Equivalent Fraction Wall 2
	Equivalent Fractions
Skill Quests	
Finding equivalent fractions	Finding equivalent fractions

Explore and explain relationships between fractions, decimals and percentages.	
Activities	
Teacher directed	
Skill Quests	
FDP relationships	FDP relationships

Draw and label, or use a given number line, to locate, order and compare with equality and inequality symbols, fractions, terminating decimals, percentages and integers.	
Activities	
Compare & order numbers	Decimal Order 1
	Comparing Fractions 2
	Arranging Fractions
	Comparing Integers
Skill Quests	
Explore multiplying & dividing integers	Comparing & ordering FDP
	Comparing & ordering integers
	Comparing & ordering fractions & mixed numbers
	Comparing & ordering decimals

Explore to extend addition and subtraction of positive integers to include negative integers.	
Activities	
Add & subtract integers	Negative or Positive?
Skill Quests	
Explore adding & subtracting integers	Adding & subtracting integers with models
	Adding & subtracting integers using patterns

Explore and interpret multiplication and division of positive fractions, visually and numerically.	
Activities	
Operations with fractions	Multiply Fraction by Whole Number
	Model Fractions to Multiply
	Divide Fractions Visual Model
	Multiply Fraction by Fraction
Skill Quests	
Explore multiplying fractions	Multiplying fractions with models

Explore and interpret multiplication and division of positive decimals, visually and numerically.	
Activities	
Explore multiplying decimals	Multiplying decimals with models
Skill Quests	
Teacher directed	

Use place value understanding to explore rounding decimals to a specified number of decimal places.	
Activities	
Round & estimate	Rounding Decimals
Skill Quests	
Round decimals	Rounding decimals

Extend the use of associative, commutative and distributive laws, additive and multiplicative partitioning, inverse operations, order of operations, equality and inequality to validate a range of mental and written strategies involving the four operations on whole numbers, positive fractions and decimals, and addition and subtraction of integers.	
Activities	
Laws & order of operations	Arithmetic Laws
	Order of Operations 1 (BIDMAS)
	Identifying Errors in Applying the Order of Operations
Skill Quests	
Laws of operations	Applying laws of operations
Order of operations	Applying the order of operations

Explore and explain the use of ratios and fractions to compare numbers and quantities. Make connections between equivalent fractions and between equivalent ratios.	
Activities	
Ratios	Ratios
	Simplify Ratios: 2 Whole numbers
Skill Quests	
Introduction to ratios	Introducing ratios

Calculating with number

Convert between fractions, decimals and percentages using flexible and efficient strategies.	
Activities	
Fractions, decimals & percentages	Match Decimals and Percentages
	Mixed decimal, percentage and fraction conversions
Skill Quests	
Convert fractions, decimals, percentages	Converting fractions, decimals & percentages
	Converting fractions & percentages
	Converting decimals & percentages
	Converting fractions & decimals

Determine percentages of quantities and express one quantity as a percentage of another using flexible and efficient strategies.	
Activities	
Fractions, decimals & percentages	Calculating Percentages (Mental)
	Calculating Percentages 1
	Percentage of a Quantity

	Quantities to Percentages (no units)
Skill Quests	
Percentages of quantities	Calculating percentages of quantities
	Expressing quantities as a percentage of another

Add and subtract integers using flexible and efficient strategies.	
Activities	
Add & subtract integers	Adding Integers: Positive, Negative or Zero
	Add Integers
	Subtract Integers
	Integers: Add and Subtract
Skill Quests	
Add & subtract integers	Adding & subtracting integers

Add and subtract positive fractions with related and unrelated denominators using flexible and efficient strategies.	
Activities	
Operations with fractions	Add Unlike Fractions
	Subtract Unlike Fractions
	Add Unlike Mixed Numbers
	Subtract Unlike Mixed Numbers
Skill Quests	
Add & subtract fractions	Adding & subtracting fractions, related
	Adding & subtracting fractions, unrelated

Multiply and divide positive fractions using flexible and efficient strategies.	
Activities	
Operations with fractions	Multiply: Whole Number and Fraction
	Divide by a Unit Fraction
	Divide Whole Number by Fraction
	Multiply Two Fractions 1
	Dividing Fractions
	Multiply Mixed Numbers
	Divide Mixed Numbers
Skill Quests	
Multiply & divide fractions	Multiplying fractions
	Dividing fractions

Multiply and divide positive decimals using flexible and efficient strategies.	
Activities	
Multiply & divide decimals	Multiply Decimals: Area Model
	Decimal by Decimal
	Divide Decimals
Skill Quests	
Multiply & divide decimals	Multiplying decimals
	Dividing decimals

Use appropriate rounding, estimation strategies and context to check reasonableness of solutions.
Activities

Round & estimate	Estimate Decimal Operations
	Estimate Products with Fractions
Skill Quests	
Estimate solutions	Estimating solutions

Algebraic techniques

Represent in expanded form, evaluate, and compare numbers expressed in index notation, including powers of 10.	
Activities	
Index notation	Exponents
	Index Notation
Skill Quests	
Index notation	Writing powers of 10
	Understanding & evaluating index notation

Extend knowledge of factors to represent natural numbers as products of prime factors using index notation as appropriate.	
Activities	
Prime factorisation	Product of Prime Factors
	Prime Factorising of Whole Numbers/ Prime Factoring
	Prime factorisation with Indices
Skill Quests	
Products of prime factors	Products of prime factors

Explore and explain connections between square numbers and square roots, cube numbers and cube roots, as products of repeated factors.	
Activities	
Squares, cubes & roots	Square Roots
	Square and Cube Roots
	Estimating Square Roots
	Estimating Cube Roots
Skill Quests	
Cube numbers & cube roots	Cube numbers & cube roots
	Estimating cube roots
Square & cube roots	Square & cube roots

Use real-world contexts or concrete materials to introduce the concept of a variable to represent a number using a letter. Create simple algebraic expressions and evaluate by substituting a given value for the variable/s.	
Activities	
Expressions & equations	Writing Algebraic Expressions
	Simple Substitution 1
	Simple Substitution
Skill Quests	
Algebraic expressions	Creating algebraic expressions
	Evaluating algebraic expressions

Extend and apply the associative and commutative laws and properties of numbers to include variables.
Activities
Teacher directed

Skill Quests	
Laws of operations, variables	Laws of operations, variables

Linear and non-linear equations and inequalities

Solve simple linear equations involving up to two operations and verify the solution by substitution.	
Activities	
Expressions & equations	Missing Numbers: Variables
	Solve Equations: Add, Subtract 1
	Solve Equations: Multiply, Divide 1
	Write an Equation: Word Problems
Skill Quests	
Solve linear equations	Solving 1-step equations with models
	Solving 1-step equations
	Solving 2-step equations

Linear and non-linear patterns and relationships

Explore, describe and represent concrete and real-world, linear and non-linear growing patterns using a table of values and a graph. Determine unknown values in the pattern.	
Activities	
Patterns	Table of Values
	Find the Function Rule
	Pattern Rules and Tables
Skill Quests	
Patterns	Describing & representing patterns
	Expressing rules as equations

Financial mathematics

Identify the features of transactional statements and verify transactions. Explain reasons for checking and keeping financial records.
Activities
Teacher directed
Skill Quests
Teacher directed

Modelling with number and algebra

In real-world situations involving whole numbers, positive fractions, decimals and percentages, addition and subtraction of integers, numbers in index form, linear equations with up to two operations, simple number patterns and/or transactional money statements I. analyse the situation, decide if an exact or approximate solution is required and determine assumptions and constraints II. represent the situation mathematically in order to reach a solution III. interpret and communicate findings in terms of the context and any assumptions or constraints.
Activities
Teacher directed
Skill Quests
Teacher directed

Measurement and geometry

Two-dimensional space and structures

Establish and apply relationships between lengths of sides, perimeter and area for squares, rectangles and triangles. Generalise and apply formulas, using appropriate units.	
Activities	
Perimeter, area & volume	Perimeter: Squares and Rectangles
	Perimeter: Triangles
	Area: Squares and Rectangles
	Area: Triangles
Skill Quests	
Perimeter & area: rectangles, triangles	Calculating the perimeter of rectangles
	Calculating the area of rectangles
	Calculating the area of triangles

Explore and explain efficient strategies to determine the perimeter and area of irregular or composite shapes composed of squares and rectangles.	
Activities	
Perimeter, area & volume	Perimeter Detectives 1
	Area: Composite Shapes
Skill Quests	
Perimeter & area: composite shapes	Calculating the perimeter of composite shapes
	Calculating the area of composite shapes

Explore and establish connections and conversions between units of area.	
Activities	
Perimeter, area & volume	Converting Units of Area
Skill Quests	
Convert between units of area	Converting between units of area

Explore, identify, define, name, label and apply the language, notation and conventions of geometry for points, lines, angles and polygons.	
Activities	
Lines & angles	What Line am I?
	Introduction to Angles on Parallel Lines 3
Skill Quests	
Geometry conventions	Labelling & naming conventions
	Identifying parallel & perpendicular lines

Investigate, identify and describe corresponding, alternate and co-interior angles formed when two parallel lines are crossed by a transversal. Use relationships to find unknown angles and explain reasoning.	
Activities	
Lines & angles	Introduction to Angles on Parallel Lines 1
	Introduction to Angles on Parallel Lines 3
	Parallel Lines
	Angles on Parallel Lines
Skill Quests	
Angle relationships on parallel lines	Exploring angle relationships on parallel lines
	Determining unknown angles on parallel lines

Demonstrate that the interior angle sum of a triangle is 180°.	
Activities	
Teacher directed	
Skill Quests	
Teacher directed	

Explore to classify and name triangles according to their side and angle properties. Use the properties to find unknown angles in triangles and explain reasoning.	
Activities	
Triangles	Angle Measures in a Triangle
	Angle Sum of a Triangle
	Triangle - Tasters
Skill Quests	
Triangles	Classifying triangles
	Determining unknown angles in triangles
	Triangles, possible & impossible

Plot coordinates on the Cartesian plane and explore, visualise, predict and determine image coordinates after translation or reflection across the axes, or rotation about the origin.	
Activities	
Transformations	Transformations: Coordinate Plane
	Rotations: Coordinate Plane
	Horizontal and Vertical Change
Skill Quests	
The Cartesian plane	Plotting coordinates on the Cartesian plane
	Plotting translations
	Plotting reflections
	Plotting rotations

Three-dimensional space and structures

Move flexibly between building and drawing rectangular and composite rectangular prisms from different views.	
Activities	
Teacher directed	
Skill Quests	
Explore different views of prisms	Exploring different views of prisms

Establish and apply relationships between the number of identical layers of cubic units, the number of cubic units in each identical layer and volume for rectangular prisms and composite rectangular prisms. Generalise and apply formula, using appropriate units.	
Activities	
Perimeter, area & volume	Volume: Rectangular Prisms 1
	Volume of Solids and Prisms - 1 cm^3 blocks
Skill Quests	
Volume of rectangular prisms	Calculating the volume of rectangular prisms

Non-spatial measurement

Explore and interpret representations of time zones within Australia using 12- and 24-hour time and determine the local time at different locations considering different times of the year.	
Activities	
Time zones	Australian Time Zones
Skill Quests	
Teacher directed	

Modelling with measurement and geometry

"In real-world situations involving perimeter and area of squares, rectangles, triangles and rectangular composite shapes, parallel lines, properties of triangles, transformations of points, views of rectangular prisms and rectangular composite objects, volume, and/or Australian time zones I. analyse the situation, decide if an exact or approximate solution is required and determine assumptions and constraints II. represent the situation mathematically in order to reach a solution III. interpret and communicate findings in terms of the context and any assumptions or constraints".	
Activities	
Teacher directed	
Skill Quests	
Teacher directed	

Probability and statistics

Probability and statistics

Construct sample spaces for single-stage chance experiments, assign probabilities to the outcomes and predict frequencies for different numbers of trials.	
Activities	
Probability	Introductory probability
	Find the Probability
	Simple Probability
Skill Quests	
Single-stage chance experiments	Identifying the sample space
	Expressing probabilities

Conduct repeated single-stage chance experiments and simulations to produce datasets, including through the use of digital tools, for an increasingly large number of trials. Discuss and describe variation and estimated probabilities for outcomes and compare to predictions and theoretical probability, where appropriate.	
Activities	
Probability	Probability
Skill Quests	
Experimental & theoretical probability	Experimental & theoretical probability

Explore and determine the mean, mode, median and range for sets of data and justify, using the context, which measure best reflects the dataset.	
Activities	
Statistics	The Mean
	The Median
	Mode
	Data Extremes and Range
	Which Measure of Central Tendency?

Skill Quests	
Measures of central tendency & range	Mean
	Mode
	Median
	Range
	Appropriate statistical measures

Represent primary categorical and numerical data in a Venn diagram, calculate related relative frequencies and interpret results.	
Activities	
Teacher directed	
Skill Quests	
Venn diagrams	Using Venn diagrams

Represent collected data in a stem and leaf plot, describe the shape and spread including outliers, and compare to dot plots or column graphs. Use the data to estimate probabilities of specific outcomes.	
Activities	
Statistics	Stem and Leaf Plots: Concept
Skill Quests	
Stem & leaf plots	Stem & leaf plots

Critically analyse statistical statements made in the media and other real-life situations, that relate to the averages of mean, mode and median. Investigate the impact of chance variation on the dataset from which the averages were determined.
Activities
Teacher directed
Skill Quests
Teacher directed

Modelling with probability and statistics

In real-world situations that involve assigning a probability to single-stage chance experiments or simulations, statistical measures, stem and leaf plots, dot plots, column graphs and/or Venn diagrams I. analyse the situation, pose questions as required, determine assumptions and constraints II. determine appropriate production of a valid and reliable dataset, statistical measures, data representations and analyses, including examination of distributions, to effectively investigate the situation III. interpret, draw inferences and communicate findings in terms of the context, assumptions, constraints, chance variation and knowledge or insights gained.
Activities
Teacher directed
Skill Quests
Teacher directed

Year 8

Number & algebra

Understanding number

Investigate, define, identify and use correct notation for rational and irrational numbers, including terminating, recurring and rounded decimals.	
Activities	
Rational & irrational numbers	Irrational Numbers
	Fraction to Terminating Decimal
	Recurring Decimals
Skill Quests	
Rational & irrational numbers	Identifying rational & irrational numbers
	Terminating & recurring decimals

Draw and label, or use a given number line, to locate, order and compare with equality and inequality symbols, rational and irrational numbers, including numbers written in index form, and percentages.	
Activities	
Rational & irrational numbers	Irrational Numbers
Compare & order numbers	Decimal Order
	Comparing Fractions 2
	Arranging Fractions
	Ordering Integers (Number Line)
	Comparing Integers
Skill Quests	
Locate rational & irrational numbers	Locating rational & irrational numbers
	Comparing rational numbers

Explore to extend multiplicative thinking with positive integers to include multiplication and division of negative integers.	
Activities	
Teacher directed	
Skill Quests	
Explore multiplying & dividing integers	Exploring multiplying & dividing integers

Extend the use of associative, commutative and distributive laws, additive and multiplicative partitioning, inverse operations, order of operations, equality and inequality to validate a range of mental and written strategies involving the four operations on any rational number.	
Activities	
Operations with rational numbers	Arithmetic Laws
	Integers: Order of Operations (BIDMAS)
	Integers: Operations Order
Skill Quests	
Order of operations	Applying the order of operations

Explore and apply proportional reasoning to find unknown numbers in equivalent ratios and fractions.	
Activities	
Proportional reasoning	Solve Proportions

Skill Quests	
Proportional reasoning	Solving proportions

Identify, interpret, compare and use familiar rates, including those represented as graphs that show a quantity varying over time.	
Activities	
Proportional reasoning	Rates
	Time Taken
	Average Speed
	Distance Travelled
	Travel Graphs
Skill Quests	
Rates	Modelling rates
	Unit rate
	Comparing rates
	Interpreting graphs
	Best buy

Calculating with number

Calculate percentage increases and decreases, using knowledge of fractions and decimals to improve efficiency.	
Activities	
Percentages	Percentage Change: Increase and Decrease
	Percent Increase and Decrease
Skill Quests	
Percentage increase & decrease	Calculating percentage increase & decrease

Multiply and divide integers using flexible and efficient strategies.	
Activities	
Operations with rational numbers	Integers: Multiplication and Division
Skill Quests	
Multiply & divide integers	Multiplying & dividing integers

Use flexible and efficient strategies for calculations involving the four operations with rational numbers, including those written in index form, using rounding, estimation or the context to check reasonableness of results.	
Activities	
Operations with rational numbers	Add Unlike Fractions
	Subtract Unlike Fractions
	Add Unlike Mixed Numbers
	Subtract Unlike Mixed Numbers
	Multiply Two Fractions 1
	Dividing Fractions
	Multiply Mixed Numbers
	Divide Mixed Numbers
	Adding Decimals
	Subtracting Decimals
	Decimal by Decimal
	Divide Decimals
	Add Decimals: Same Sign

	Add Decimals: Different Signs
	Add Integers
	Subtract Integers
Skill Quests	
Operations with rational numbers	Adding & subtracting fractions & mixed numbers
	Multiplying fractions
	Dividing fractions
	Adding & subtracting decimals
	Multiplying decimals
	Dividing decimals

Algebraic techniques

Develop and apply the index laws for numbers in index form with positive-integer and zero indices.	
Activities	
Index laws	Properties of Exponents
	Simplifying with Index Laws 1/Simplifying with Exponent Laws 1
Skill Quests	
Index laws	Multiplication & division laws
	Power of a quotient law
	Power of a power law
	Zero index law
	Applying index laws

Extend and apply knowledge of additive and multiplicative partitioning, order of operations and the associative and commutative laws of numbers, to create or simplify algebraic expressions involving the four operations.	
Activities	
Expressions & equations	Like Terms: Add, Subtract
	Algebraic Multiplication
	Algebraic Division
Skill Quests	
Algebraic expressions	Simplifying algebraic expressions
	Writing algebraic expressions

Extend and apply knowledge of the distributive law with numbers to algebraically expand and factorise expressions with a common numerical factor.	
Activities	
Expressions & equations	Using the Distributive Property
	Factorising
Skill Quests	
Expand & factorise algebraic expressions	Expanding algebraic expressions
	Factorising algebraic expressions
	Expanding algebraic expressions

Linear and non-linear equations and inequalities

Solve linear equations involving up to three operations, including those with negative coefficients or requiring collection of like terms, and verify the solution by substitution.	
Activities	
Expressions & equations	Solving Simple Equations

	Equations with Fractions
Skill Quests	
Solve linear equations	Solving 2-step equations
	Solving 3-step equations

Determine and explain why there are two solutions to a quadratic equation of the form $x2 = k$ if $k > 0$.
Activities
Expressions & equations — Equations: Simple quadratics
Skill Quests
Quadratic equations — Solving quadratic equations

Linear and non-linear patterns and relationships

Use a table of values to move flexibly between the equation of a line represented by $y = mx + c$ and its graph and make connections between the algebraic and graphical solution of the equation. Explore and explain similarities and differences between multiple lines on the same axes.
Activities
Expressions & equations — Graphing from a Table of Values
Reading Values from a Line
Find the Pattern Rule
Pattern Rules and Tables
Determining a Rule for a Line
Which Straight Line?
Skill Quests
Tables, equations & graphs — Graphing using a table of values
Writing the equation of a line

Financial mathematics

Identify the advantages and disadvantages of various forms of payment for goods and services and determine penalties, such as interest charged and fees, inherent in these payments
Activities
Teacher directed
Skill Quests
Teacher directed

Modelling with number and algebra

In real-world situations involving rational and irrational numbers, ratios, rates, percentage increases and decreases, numbers in index form, the distributive law, factorisation, linear equations with up to three operations, linear or simple quadratic relationships and/or penalties involved in different forms of goods and services payment I. analyse the situation, decide if an exact or approximate solution is required and determine assumptions and constraints II. represent the situation mathematically in order to reach a solution III. interpret and communicate findings in terms of the context and any assumptions or constraints.
Activities
Teacher directed
Skill Quests
Teacher directed

Measurement and geometry

Two-dimensional space and structures

Establish and apply relationships between lengths of sides, perpendicular lengths, lengths of diagonals, perimeter and area for parallelograms, trapeziums, rhombuses and kites. Generalise and apply formulas, using appropriate units.	
Activities	
Two-dimensional space	Area: Parallelograms (Metric)
	Area: Quadrilaterals
Skill Quests	
Perimeter & area	Calculating perimeter: special quadrilaterals
	Calculating area: special quadrilaterals
	Calculating area: parallelogram
	Calculating area: trapezium
	Calculating area: rhombus
	Calculating area: kite

Identify, describe and explore the relationship between the radius, diameter and circumference of a circle and use this to establish and apply formulas to determine perimeter and area, using appropriate units.	
Activities	
Two-dimensional space	Circumference: Circles
	Area: Circles 1
Skill Quests	
Circles	Identifying parts of a circle
	Calculating the circumference of a circle
	Calculating the area of a circle

Investigate in order to establish, define and use Pythagoras' theorem to find the length of an unknown side in a right-angled triangle.	
Activities	
Two-dimensional space	Hypotenuse of a Right Triangle
	Pythagoras' Theorem
	Pythagoras: Find a Short Side (integers only)
	Pythagoras: Find a short side (rounding needed)
Skill Quests	
Pythagoras' theorem	Finding the length of an unknown side, short side
	Finding the length of an unknown side, hypotenuse
	Finding the length of an unknown side, mixed

Explore, identify, classify and establish properties of quadrilaterals, including the interior angle sum. Use this to determine unknown sides and angles in quadrilaterals and explain reasoning.	
Activities	
Two-dimensional space	Properties of Quadrilaterals
	Quadrilaterals: Angle Sum with Equations
	Interior Angles
Skill Quests	
Quadrilaterals	Properties of special quadrilaterals
	Classifying quadrilaterals
	Finding interior angles in quadrilaterals
	Finding interior angles in polygons

Recognise and identify equal corresponding sides and equal corresponding angles of congruent figures. Explore, visualise, predict and determine the translation, reflection, rotation, or combination of these transformations, to match one congruent figure to another.	
Activities	
Two-dimensional space	Congruent Figures (Grid)
	Congruent Figures: Find Values
Skill Quests	
Congruent figures	Identifying congruent figures

Three-dimensional space and structures

Explore in order to visualise and draw cross-sections of different solids and use this to identify prisms.	
Activities	
Cross-sections of prisms	Exploring cross-sections of prisms
Skill Quests	
Teacher directed	

Establish and apply relationships between the area of a uniform cross-section, the length perpendicular to that uniform cross-section and the volume of right prisms. Generalise, apply formulas and use this to connect to capacity if required, using appropriate units.	
Activities	
Three-dimensional space	Volume: Rectangular Prisms 2
	Volume of Triangular prisms
	Volume: Triangular Prisms
	Volume: Prisms
Skill Quests	
Volume of prisms	Calculating the volume of prisms

Explore and establish connections and conversions between units of volume and between units of volume and capacity.	
Activities	
Three-dimensional space	Millilitres and Litres
	Litre Conversions
	Converting Volume
	Capacity Word Problems
Skill Quests	
Volume & capacity conversions	Converting units of volume
	Converting between units of volume & capacity

Non-spatial measurement

Explore and interpret representations of national and international time zones using 12- and 24-hour time, and determine duration of events across multiple time zones.	
Activities	
Time zones	Time Zones
Skill Quests	
Time zones	Calculating with time zones

Modelling with measurement and geometry

In real-world situations involving perimeter and area of quadrilaterals and circles, properties of quadrilaterals, transformations of figures, Pythagoras' theorem, congruency, cross-sections, volume or capacity of prisms and/or international time zones I. analyse the situation, decide if an exact or approximate solution is required and determine assumptions and constraints II. represent the situation mathematically in order to reach a solution III. interpret and communicate findings in terms of the context and any assumptions or constraints.
Activities
Teacher directed
Skill Quests
Teacher directed

Probability and statistics

Probability and statistics

Construct sample spaces, such as lists, simple tree diagrams, tables or arrays to show all possible outcomes for two events. Assign probabilities to outcomes and events including those involving 'and', 'not', 'at least', exclusive 'or' and inclusive 'or'.	
Activities	
Probability	Tree Diagram
	Tree Diagrams
	Dice and Coins
	Conditional probability
Skill Quests	
Compound events	Identifying the sample space
	Compound events

Recognise that complementary events have a combined probability of one and use this relationship to calculate probabilities.	
Activities	
Probability	Complementary Events
Skill Quests	
Complementary events	Complementary events

Conduct repeated chance experiments and simulations for two events to produce datasets, including through the use of digital tools, for a large number of trials. Discuss, explain and compare variation and estimated probabilities for simple and compound events.	
Activities	
Probability	Relative Frequency
Skill Quests	
Teacher directed	

Analyse data represented in stem and leaf plots, column graphs and frequency tables to determine the mean, mode/s, median and range. Describe the effect of any outliers on the statistical measures.	
Activities	
Statistics	Median from Stem and Leaf Plot
	Mode from Stem and Leaf Plot
	Stem and Leaf Plots with Range
	Mean from Frequency Table
	Mode from Frequency Table
	Median from Frequency Table

Skill Quests	
Measures of central tendency & range	Measures of central tendency & range

Use secondary data represented in two-way tables and Venn diagrams to describe events, including those that are mutually exclusive. Estimate related probabilities and make predictions as appropriate.	
Activities	
Probability	Two-way Table Probability
	Probability Tables
	Venn Diagrams
Skill Quests	
Two-way tables & Venn diagrams	Interpreting two-way tables
	Using Venn diagrams

Investigate and explain techniques for data collection, including census, survey, experiment and observation and explain the practicalities and implications of obtaining data through these techniques.	
Activities	
Teacher directed	
Skill Quests	
Data collection	Investigating data collection

Explore, analyse and compare variation between results from same size random samples drawn from the same population. Identify and explain how chance variation impacts on data validity, reliability and conclusions drawn.	
Activities	
Teacher directed	
Skill Quests	
Sample variation	Exploring sample variation

Critically analyse visual representations and tables in the media and other real-life situations to identify misleading or inaccurate features and interpretations. Recognise the impact of the validity and reliability of the data used.	
Activities	
Teacher directed	
Skill Quests	
Misleading graphs	Identifying misleading graphs

Modelling with probability and statistics

In real-world situations that involve two-stage chance experiments or simulations, complementary events, data collection methods, same sized random sampling and/or analysis of graphs, tables and data I. analyse the situation, pose questions as required, determine assumptions and constraints II. determine appropriate production of a valid and reliable dataset, statistical measures, data representations and analyses, including examination of distributions, to effectively investigate the situation III. interpret, draw inferences and communicate findings in terms of the context, assumptions, constraints, chance variation and knowledge or insights gained.
Activities
Teacher directed
Skill Quests
Teacher directed

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