8 Years 7–10 Life Skills outcomes and content

A small percentage of students with special education needs, particularly those with an intellectual disability, may best fulfil the mandatory curriculum requirements for Mathematics Years 7–10 by undertaking Life Skills outcomes and content.

In order to provide a relevant and meaningful program of study that reflects the needs, interests and abilities of each student, schools may integrate Mathematics Years 7–10 Life Skills outcomes and content across a variety of school and community contexts.

The following points need to be taken into consideration:

- specific Life Skills outcomes will be selected on the basis that they meet the particular needs, goals and priorities of each student
- students are not required to complete all outcomes
- outcomes may be demonstrated independently or with support.

A range of adjustments to teaching, learning and assessment experiences should be explored before a decision is made to access Years 7–10 Life Skills outcomes and content. Information about adjustments can be found in *Life Skills Years 7–10: Advice on Planning, Programming and Assessment*.

The Years 7–10 Life Skills outcomes and content are developed from the objectives of the *Mathematics K–10 Syllabus*. They indicate the knowledge, understanding and skills, expected to be gained by most students as a result of effective teaching and learning by the end of a stage.

8.1 Years 7–10 Life Skills outcomes

✍ Consult

Table of objectives and outcomes

Objective – Working Mathematically Students: • understand and connect related mathematical concepts, choosing, applying and communicating approaches in order to investigate and solve problems
Life Skills outcomes A student:
MALS-1WM responds to and uses mathematical language to demonstrate understanding MALS-2WM applies a range of mathematical strategies to solve problems MALS-3WM uses reasoning to recognise mathematical relationships

Objective – Number and Algebra Students: • develop efficient strategies for numerical calculation, recognise patterns, describe relationships and apply algebraic techniques and generalisation
Life Skills outcomes A student:
MALS-4NA recognises language used to represent number MALS-5NA counts in familiar contexts MALS-6NA compares, orders, reads and represents numbers MALS-7NA recognises and compares fractions in everyday contexts MALS-8NA represents and operates with fractions, decimals or percentages in everyday contexts MALS-9NA uses a range of strategies for addition and subtraction MALS-10NA uses a range of strategies for multiplication and division MALS-11NA recognises, matches and orders coins and notes MALS-12NA reads, writes and calculates with money MALS-13NA makes informed decisions about purchasing goods and services MALS-14NA plans and manages personal finances MALS-15NA recognises and continues repeating patterns MALS-16NA calculates missing values by completing simple number sentences

Objective – Measurement and Geometry
Students:

- identify, visualise and quantify time, location and shape, applying formulae, strategies and geometric reasoning

Life Skills outcomes
A student:

MALS-17MG
recognises time in familiar contexts

MALS-18MG
recognises and relates time in a range of contexts

MALS-19MG
reads and interprets time in a variety of situations

MALS-20MG
calculates and measures time and duration in everyday contexts

MALS-21MG
organises personal time and manages scheduled activities

MALS-22MG
estimates and measures in everyday contexts

MALS-23MG
recognises and uses units to estimate and measure length

MALS-24MG
selects and uses units to estimate and measure mass

MALS-25MG
selects and uses units to estimate and measure volume and capacity

MALS-26MG
applies formal units to estimate and calculate area

MALS-27MG
recognises, matches and sorts three-dimensional objects and/or two-dimensional shapes

MALS-28MG
identifies the features of three-dimensional objects and/or two-dimensional shapes and applies these in a range of contexts

MALS-29MG
responds to and uses the language of position in everyday contexts

MALS-30MG
recognises that maps and plans are a representation of positions in space

MALS-31MG
uses maps and plans in a range of contexts

Objective – Statistics and Probability Students: • collect, represent, analyse, interpret and evaluate data, assign and use probabilities, and make sound judgements
Outcomes A student:
MALS-32SP recognises data displayed in a variety of formats MALS-33SP gathers, organises and displays data MALS-34SP interprets information and draws conclusions from data displays MALS-35SP recognises and uses the language of chance in a range of contexts MALS-36SP recognises the elements of chance and probability in everyday events

Years 7–10 Life Skills and Related Syllabus Outcomes

Objective – Working Mathematically Students: • understand and connect related mathematical concepts, choosing, applying and communicating approaches in order to investigate and solve problems	
Life Skills outcomes A student:	**Related Stage 4/5 outcomes** A student:
MALS-1WM responds to and uses mathematical language to demonstrate understanding	MA4-1WM communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols MA5.1-1WM uses appropriate terminology, diagrams and symbols in mathematical contexts MA5.2-1WM selects appropriate notations and conventions to communicate mathematical ideas and solutions
MALS-2WM applies a range of mathematical strategies to solve problems	MA4-2WM applies appropriate mathematical techniques to solve problems MA5.1-2WM selects and uses appropriate strategies to solve problems MA5.2-2WM interprets mathematical or real-life situations, systematically applying appropriate strategies to solve problems
MALS-3WM uses reasoning to recognise mathematical relationships	MA4-3WM recognises and explains mathematical relationships using reasoning MA5.1-3WM provides reasoning to support conclusions which are appropriate to the context MA5.2-3WM constructs arguments to prove and justify results

Objective – Number and Algebra Students: • **develop efficient strategies for numerical calculation, recognise patterns, describe relationships and apply algebraic techniques and generalisation**	
Life Skills outcomes A student:	**Related Stage 4/5 outcomes** A student:
MALS-4NA recognises language used to represent number MALS-5NA counts in familiar contexts MALS-6NA compares, orders, reads and represents numbers	MA4-4NA compares, orders and calculates with integers, applying a range of strategies to aid computation
MALS-7NA recognises and compares fractions in everyday contexts MALS-8NA represents and operates with fractions, decimals or percentages in everyday contexts	MA4-5NA operates with fractions, decimals and percentages
MALS-9NA uses a range of strategies for addition and subtraction	MA4-4NA compares, orders and calculates with integers, applying a range of strategies to aid computation
MALS-10NA uses a range of strategies for multiplication and division	MA4-4NA compares, orders and calculates with integers, applying a range of strategies to aid computation
MALS-11NA recognises, matches and orders coins and notes MALS-12NA reads, writes and calculates with money MALS-13NA makes informed decisions about purchasing goods and services MALS-14NA plans and manages personal finances	MA4-6NA solves financial problems involving purchasing goods MA5.1-4NA solves financial problems involving earning, spending and investing money MA5.2-4NA solves financial problems involving compound interest
MALS-15NA recognises and continues repeating patterns	MA4-8NA generates number properties to operate with algebraic expressions
MALS-16NA calculates missing values by completing simple number sentences	MA4-7NA operates with ratios and rates, and explores their graphical representation MA4-10NA uses algebraic techniques to solve simple linear equations MA5.2-8NA solves linear and simple quadratic equations, linear inequalities and linear simultaneous equations, using analytical and graphical techniques

Objective – Measurement and Geometry Students: • identify, visualise and quantify time, location and shape, applying formulae, strategies and geometric reasoning	
Life Skills outcomes A student:	**Related Stage 4/5 outcomes** A student:
MALS-17MG recognises time in familiar contexts MALS-18MG recognises and relates time in a range of contexts MALS-19MG reads and interprets time in a variety of situations MALS-20MG calculates and measures time and duration in everyday contexts MALS-21MG organises personal time and manages scheduled activities	MA4-15MG performs calculations of time that involve mixed units, and interprets time zones
MALS-22MG estimates and measures in everyday contexts MALS-23MG recognises and uses units to estimate and measure length	MA4-12MG calculates the perimeter of plane shapes and the circumference of circles
MALS-24MG selects and uses units to estimate and measure mass	
MALS-25MG selects and uses units to estimate and measure volume and capacity	MA4-14MG uses formulae to calculate the volume of prisms and cylinders, and converts between units of volume MA5.2-12MG applies formulae to calculate the volume of composite solids comprised of right prisms and cylinders
MALS-26MG applies formal units to estimate and calculate area	MA4-13MG uses formulae to calculate the area of quadrilaterals and circles, and converts between units of area MA5.1-8MG calculates the area of composite shapes, and surface area of rectangular and triangular prisms MA5.2-11MG calculates the surface area of right prisms, cylinders and related composite solids
MALS-27MG recognises, matches and sorts three-dimensional objects and/or two-dimensional shapes MALS-28MG identifies the features of three-dimensional objects and/or two-dimensional shapes and applies these in a range of contexts	MA4-14MG uses formulae to calculate the volume of prisms and cylinders and converts between units of volume MA4-17MG classifies, describes and uses the properties of triangles and quadrilaterals, and determines congruent triangles to find unknown side lengths and angles MA5.2-12MG applies formulae to calculate the volume of composite solids composed of right prisms and cylinders

MALS-29MG responds to and uses the language of position in everyday contexts MALS-30MG recognises that maps and plans are a representation of positions in space MALS-31MG uses maps and plans in a range of contexts	MA4-11NA creates and displays number patterns; graphs and analyses linear relationships; and performs transformations on the Cartesian plane MA5.1-6NA determines the midpoint, gradient and length of an interval, and graphs linear relationships MA5.1-11MG describes and applies the properties of similar figures and scale drawings

Objective – Statistics and Probability Students: • collect, represent, analyse, interpret and evaluate data, assign and use probabilities, and make sound judgements	
Life Skills outcomes A student:	**Related Stage 4/5 outcomes** A student:
MALS-32SP recognises data displayed in a variety of formats MALS-33SP gathers, organises and displays data MALS-34SP interprets information and draws conclusions from data displays	MA4-19SP collects, represents and interprets single sets of data, using appropriate statistical displays MA5.1-12SP uses statistical displays to compare sets of data, and evaluates statistical claims made in the media MA5.2-15SP uses quartiles and box plots to compare sets of data, and evaluates sources of data
MALS-35SP recognises and uses the language of chance in a range of contexts MALS-36SP recognises the elements of chance and probability in everyday events	MA4-21SP represents probabilities of simple and compound events MA5.1-13SP calculates relative frequencies to estimate probabilities of simple and compound events MA5.2-16SP investigates relationships between two statistical variables, including their relationship over time MA5.2-17SP describes and calculates probabilities in multi-step chance experiments

8.2 Years 7–10 Life Skills

The Years 7–10 Life Skills content forms the basis for learning opportunities. Students will not be required to complete all of the content to demonstrate achievement of an outcome.

✍ consult

The *Mathematics K-10 Syllabus* is organised into one Working Mathematically strand and three content strands.

Further information about the organisation of content is provided in Section 7.

Mathematics • Life Skills

Number and Algebra

Numeration 1

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- uses reasoning to recognise mathematical relationships MALS-3WM
- recognises language used to represent number MALS-4NA

Students:

- recognise language related to number, eg none, few, many, more, less [L]
  - respond to questions which involve descriptions of number, eg 'Are all the books on the shelf?', 'Which box has no pens?' 'Which plate has more cakes?' (Communicating, Understanding) [L, N]
  - respond to requests which involve descriptions of number, eg 'Put all the books on the shelf', 'Take some paper from my desk', 'Place a few chairs near the table' (Communicating, Understanding) [L, N]
  - describe and compare groups of objects using language descriptive of number, eg 'There are none left on the shelf', 'I have more cards than my brother' (Communicating, Understanding, Reasoning) [L, N]
- recognise that some languages other than English, such as Aboriginal and Torres Strait Islander languages, may have interchangeable terms with the same meaning [AHC, IU]
- recognise ordinal terms, eg first, second, third [L]
  - respond to directions involving ordinal terms, eg 'Give a ball to the first person in each row', 'Put a book on every second chair' (Communicating, Understanding) [L, N]
  - use ordinal terms in familiar contexts, eg 'I go to training on the first and third Wednesday of the month', 'The youth group meets on the first Monday of each month', 'My birthday is on the fifth of November', 'Is the office on the first or second floor?', 'Is the post office in the third or fourth street on the left?' (Communicating, Understanding) [L, N]

Mathematics • Life Skills

Number and Algebra

Numeration 2

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- counts in familiar contexts MALS-5NA

Students:

- count in familiar situations, eg count out books for a group or class, count uniforms for a sports team, count seedlings when re-planting [N, SE]
- count objects by twos, fives, tens [N]
- match groups of objects that have the same number of items [N, CCT]
  - identify groups that have the same number of items as a given group, eg match golf balls with tees, match pieces of cake with people at a party (Understanding, Fluency) [N, CCT]
- compare and order groups of objects according to the number in the group [N, CCT]
  - identify groups that have more or fewer items than a given group, eg available plates/cups for guests at a party (Understanding, Fluency) [N, CCT]
  - order groups of objects by ascending/descending order according to the number in the group (Fluency) [N, CCT]
- count with single-digit numbers [N]
- count with two-digit numbers [N]
- count forwards and backwards from a given number in the range 0 to 100 [N]
- solve problems involving counting, eg ‘How many people are in class today?’ [N, CCT]
- count with three digit numbers [N]
- count by twos, fives, tens and hundreds [N]
  - tell the time on a watch or clock by counting by fives around the clock or watch face (Communicating, Understanding, Fluency) [N]
- recognise alternate counting systems, eg abacus in Asian cultures, use of grouping strategies to count stock in indigenous cultures [A, AHC]

Mathematics • Life Skills

Number and Algebra

Numeration 3

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- applies a range of mathematical strategies to solve problems MALS-2WM
- uses reasoning to recognise mathematical relationships MALS-3WM
- compares, orders, reads and represents numbers MALS-6NA

Students:

- read, order and record numbers 0 to 9 [N]
  - identify some of the ways numbers are used in everyday life, eg telephone numbers, bus numbers, Personal Identification Number (PIN) (Understanding, Reasoning) [N]
- read, order and record two-digit numbers [N]
- recognise, read and interpret numerical information in a range of formats, eg recipes, medication dosages [L, N]
  - identify and locate numbers in a range of situations, eg table of contents in a book, seat numbers in a theatre, odd and even house numbers (Understanding) [N]
- recognise, read and convert Roman numerals used in everyday contexts [N, CCT]
- read, order and record three-digit numbers [N]
- recognise odd and even numbers [N]
- recognise and read numbers with more than three digits [N]

Mathematics • Life Skills

Number and Algebra

Numeration 4

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- applies a range of mathematical strategies to solve problems MALS-2WM
- recognises and compares fractions in everyday contexts MALS-7NA

Students:

- recognise the need for two equal parts when dividing a whole in half [N]
  - allocate portions or divide materials, eg cut a length of tape/rope into equal pieces (Fluency, Problem Solving, Understanding) [N, PSC]
- recognise halves [N]
  - identify items that are a half, eg half an apple, half a pizza (Understanding) [N]
  - identify items that are less than a half or more than a half, eg 'The glass is more than half full' (Understanding) [N]
  - determine if parts of a whole object, or collection of objects, are equal, eg 'Has the cake been cut into two equal parts?' (Understanding, Reasoning) [N]
  - share an object into two equal parts, eg giving half a sandwich (Understanding, Fluency) [N, PSC]
- recognise and use the terms 'half' and 'halves' [L]
  - describe situations using the terms 'half' and 'halves', eg 'The television program is half an hour long' (Communicating, Understanding) [L, N]
  - follow an instruction involving fraction language in everyday contexts, eg 'Move to the other half of the soccer field' (Understanding) [L, N]
- recognise the need for four equal parts when dividing a whole into quarters [N]
  - allocate portions or divide materials, eg cut a cake into equal pieces (Understanding, Fluency, Problem Solving) [N, PSC]
- recognise quarters [N]
  - identify items that are a quarter of a whole, eg quarter of an apple, quarter of a sandwich (Understanding) [N]
  - identify items that are less than a quarter or more than a quarter (Understanding) [N]
  - determine if parts of a whole object, or collection of objects, are equal, eg 'Has the cake been cut into four equal parts?' (Understanding, Problem Solving) [N]
  - put two quarters together to make a half (Communicating, Understanding) [N]
  - share an object into four equal parts, eg giving a quarter of an apple (Understanding, Fluency) [N, PSC]
- recognise and use the term 'quarter' [L]
  - describe situations using the term 'quarter', eg 'Lunch is three-quarters of an hour' (Communicating, Understanding) [L, N]

Mathematics • Life Skills

Number and Algebra

Numeration 4

- follow an instruction involving fraction language in everyday contexts, eg 'Give a quarter of the orange to your friend' (Understanding, Fluency) [L, N]

- recognise fractions in everyday contexts, eg three-quarters of Australia is dry desert, more than half of the Earth is covered by water, one-quarter of the class have migrated to Australia [SE, DD]
- compare fractions, eg half of the pizza is more than a quarter [N, CCT]

Mathematics • Life Skills

Number and Algebra

Operations 1

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- applies a range of mathematical strategies to solve problems MALS-2WM
- uses reasoning to recognise mathematical relationships MALS-3WM
- represents and operates with fractions, decimals or percentages in everyday contexts MALS-8NA

Students:

Fractions

- use fraction notation to represent parts of a whole, eg $\frac{1}{2}, \frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{1}{3}, \frac{2}{3}$ [N]
  - interpret the denominator as the number of equal parts a whole has been divided into (Understanding) [N]
  - interpret the numerator as the number of equal fractional parts, eg $\frac{3}{4}$ means 3 equal parts of 4 (Understanding) [N]
- add a fraction to a whole number using concrete materials and record the result as a mixed numeral, eg $3+\frac{3}{4}=3\frac{3}{4}$ [N]
- add a fraction to another fraction so the total is no more than one whole using concrete materials [N]
- add a fraction to another fraction so the total is more than one whole using concrete materials and represent this as a mixed numeral, eg five quarter slices of pizza is $1\frac{1}{4}$ pizzas [N]
- subtract a fraction from one whole using concrete materials, eg subtract three quarters of a pizza and find the fraction remaining [N]
- find a unit fraction of a quantity, eg $\frac{1}{2}$ of \$30, $\frac{1}{3}$ of 300 g, $\frac{1}{4}$ of 100 cm, etc [N]
  - recognise that finding a unit fraction of a quantity is related to division, eg half of \$60 is the same as \$60 divided by 2 (Communicating, Understanding, Fluency) [N, CCT]
- find any fraction of a quantity, eg $\frac{2}{3}$ of \$30, $\frac{3}{4}$ of 100 cm, etc [N]
  - recognise the relationship between finding a unit fraction of a quantity and any fraction of a quantity, eg to find three-quarters of one hour, first find one quarter of an hour and then multiply by 3 (Understanding, Fluency) [N, CCT]

Decimals

- read numbers as decimals, eg 3.5 is read as ‘three point five’, 3.12 is read as ‘three point one two’ [N]
  - recognise the use of decimals in the community, eg advertisements for interest rates (Understanding, Reasoning) [N, PSC]

Mathematics • Life Skills

Number and Algebra

Operations 1

- recognise the use of decimals for recording measurements, eg 3.5 metres means three and a half metres, timing swimming races to tenths and hundredths of a second (Communicating, Understanding, Reasoning) [N, PSC]

- recognise commonly used fractions in decimal notation, eg $\frac{1}{2} = 0.5$, $\frac{1}{4} = 0.25$ [N]
- add and subtract numbers correct to two decimal places in the context of money, eg $2.25 + $1.25 [N]
- relate fractions to decimals in the context of parts of one dollar, eg 10 cents = $\frac{10}{100}$ of $1 = $0.10, 50 cents = $\frac{50}{100}$ of $1 = $0.50 [N]
- interpret decimal notation for tenths and hundredths, eg 0.1 is the same as $\frac{1}{10}$, 0.01 is the same as $\frac{1}{100}$ [N]
  - interpret calculator displays involving decimals (Communicating, Understanding, Reasoning) [L]
- compare decimals with the same number of decimal places, eg 0.3 is less than 0.5 [N]
  - use a number line to position decimals between 0 and 1 (Communicating, Understanding, Fluency) [N]
- round decimals in the context of money, eg rounding $4.99 to $5.00 [N]
  - explain the result of rounding when purchasing goods where the total number of cents involved cannot be made up using 5 and 10 cent pieces, eg round $5.02 to $5.00, round $2.03 to $2.05 (Communicating, Understanding, Fluency, Reasoning) [N, CCT, PSC]

Percentages

- read the symbol % as 'percent' [L]
  - recognise the use of the % symbol in a variety of contexts, eg advertising, discounts (Communicating, Understanding) [L]
- recognise commonly used percentages as fractions, eg 50% = $\frac{1}{2}$, 25% = $\frac{1}{4}$, 10% = $\frac{1}{10}$ [N]
- recognise that percentages are parts of 100, eg 50% = $\frac{50}{100}$ [N]
- interpret the use of percentages in everyday contexts [N]
  - interpret advertising and media reports involving percentages, eg 90% success rate for goal kicking, 25% more chocolate (Communicating, Understanding, Reasoning) [N, CCT, PSC]
  - decide which is the best interest rate offered for a loan using online calculators (Communicating, Fluency, Reasoning) [N, CCT, WE]
- calculate simple percentages, eg 10% off a $50 item, adding 10% GST to a bill [N]
- recognise calculations as the same, eg finding 50% of a quantity is the same as dividing a quantity by 2 [N, CCT]

Mathematics • Life Skills

Number and Algebra

Operations 2

Outcomes

A student:

• responds to and uses mathematical language to demonstrate understanding	MALS-1WM
• applies a range of mathematical strategies to solve problems	MALS-2WM
• uses reasoning to recognise mathematical relationships	MALS-3WM
• uses a range of strategies for addition and subtraction	MALS-9NA

Students:

- model addition using concrete materials [N]
  - combine two or more groups of objects (Understanding, Fluency) [N]
  - compare two groups of objects to determine how many more in the larger group (Understanding, Reasoning) [N]
- model subtraction using concrete materials [N]
  - separate and take part of a group of objects away to model subtraction (Understanding, Fluency) [N]
- respond to and use the language of addition and subtraction in everyday contexts, eg 'add', 'plus', 'equals', 'is equal to', 'take away', 'minus', and 'the difference between' [L]
  - recognise terms in a range of situations, eg difference between scores in a computer game (Understanding) [L]
  - use terms in a range of situations, eg 'My allowance plus birthday money equals $50' (Communicating, Understanding) [L]
- add two numbers using concrete materials and/or mental strategies
  - count on from the larger number to find the total of two numbers (Communicating, Fluency) [N]
- subtract a number from a given number using concrete materials and/or mental strategies [N]
  - count back from a number to find the number remaining (Communicating, Fluency) [N]
- recognise and apply the symbols +, – and =
- add two numbers using mental strategies, written processes and/or calculator strategies [N]
  - create combinations for numbers to at least 10, eg 'How many more to make ten?' (Understanding, Fluency) [N]
  - estimate the sum of two numbers and check by performing the calculation or using a calculator (Fluency, Problem Solving) [N, CCT]
- subtract a number from a given number using mental strategies, written processes and/or calculator strategies [N]
  - estimate how much will be left over when one number is subtracted from another and check by performing the calculation or using a calculator (Fluency, Problem Solving) [N, CCT]
- add more than two numbers using mental, written and/or calculator strategies, eg 6 + 2 + 5 [N]
- subtract more than two numbers using mental, written and/or calculator strategies, eg 6 – 4 – 2 [N]

Mathematics • Life Skills

Number and Algebra

Operations 2

- select and apply appropriate mental, written and/or calculator strategies for addition and subtraction to solve problems in a range of contexts (Problem Solving) [N, CCT]
  - calculate the total cost when purchasing more than one item, eg total cost of a $2.50 juice and a $4.50 sandwich (Fluency, Problem Solving) [N, PSC]
  - calculate the change when purchasing an item, eg change from $10 when purchases total $3.50 (Fluency, Problem Solving) [N, PSC]

Mathematics • Life Skills

Number and Algebra

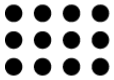
Operations 3

Outcomes

A student:

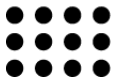
- applies a range of mathematical strategies to solve problems MALS-2WM
- uses reasoning to recognise mathematical relationships MALS-3WM
- uses a range of strategies for multiplication and division MALS-10NA

Students:

- model multiplication using concrete materials [N]
  - combine equal groups of objects, eg three boxes each containing four pencils (Understanding, Fluency) [N]
- model division using concrete materials [N]
  - share a group of objects equally amongst people, eg 12 balls among 3 students (Understanding, Fluency) [N, PSC]
  - use repeated subtraction with concrete materials, eg determine how many bags of golf balls can be created by placing 5 golf balls into each bag (Understanding, Fluency) [N]
- respond to and use the language of multiplication and division in everyday contexts, eg 'lots of', 'groups of', 'shares', 'equal groups'
  - recognise terms in a range of situations, eg 'Two groups of football supporters were at the game' (Understanding)
  - use terms in a range of situations, eg 'My share of the money is $10' (Communicating, Understanding)
- multiply two numbers using concrete materials and/or mental strategies
  - collect groups of items from two or more people and determine how many items there are altogether (Understanding, Fluency) [N]
- divide two numbers using concrete materials and/or mental strategies
  - share a number of items between two or more people using concrete materials (Understanding, Fluency) [N, PSC]
- recognise and apply the symbols ×, ÷ and =
- multiply two numbers using mental strategies, written processes and/or calculator strategies [N]
  - multiply numbers using an array of equal rows (Fluency) [L, N],
    eg  3 groups of 4 is 12 $3 \times 4 = 12$
  - determine quantities needed when preparing a meal for several people using a recipe based on ingredients for one person (Problem Solving) [N, CCT, PSC]
  - estimate the product of two numbers and check by performing the calculation or using a calculator (Fluency, Problem Solving) [N, CCT]
- divide two numbers using mental strategies, written processes and/or calculator strategies [N]

Mathematics • Life Skills

Number and Algebra
Operations 3

- divide numbers using an array of equal rows (Fluency) [L, N],
  eg  12 shared among 3 is 4 $12 \div 3 = 4$
- determine quantities needed when preparing a meal for one person using a recipe based on ingredients for four people (Problem Solving) [CCT, N, PSC]
- calculate the cost of a single item when given the price of a pack containing several items (Fluency, Problem Solving) [CCT, N, PSC]
- estimate the result when dividing two numbers and check by performing the calculation or using a calculator (Fluency, Problem Solving) [N, CCT]

- multiply more than two numbers using mental, written and/or calculator strategies, eg $3 \times 5 \times 2 = 30$ [N]
- divide more than two numbers using mental, written and/or calculator strategies, eg $20 \div 5 \div 2 = 2$ [N]
- select and apply appropriate mental, written and/or calculator strategies for multiplication and division to solve problems in a range of contexts (Problem Solving) [N, CCT]
  - determine the total cost of a number of items given the price of one, eg calculate the combined cost of train travel over two or more days for two or more people (Fluency, Problem Solving) [N, CCT, PSC]
  - determine the unit cost of an item or service when sold as a group, eg calculate the daily cost of shared accommodation over a set period of time for two or more people (Fluency, Problem Solving) [N, CCT, PSC]

Mathematics • Life Skills

Number and Algebra

Money 1

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- applies a range of mathematical strategies to solve problems MALS-2WM
- recognises, matches and orders coins and notes MALS-11NA

Students:

- recognise a range of coins and notes [N, WE]
- match and sort coins and notes into groups on the basis of face value [N]
- recognise alternate forms of currency in ancient cultures, eg bartering system used by Aboriginal and Torres Strait Islander cultures [AHC]
- recognise that coins and notes have different values [WE]
    - order coins and notes on the basis of face value (Understanding, Fluency) [N]
- recognise and use appropriate coins to purchase goods
- recognise and use groups of coins to purchase goods
- recognise and use appropriate notes to purchase items
    - indicate the most appropriate note to purchase an item in a shop, eg five dollar note, twenty dollar note (Communicating, Understanding) [N, PSC]
- recognise some coins and notes of foreign currencies, such as Asian currencies [IU, A]

Mathematics • Life Skills

Number and Algebra

Money 2

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- applies a range of mathematical strategies to solve problems MALS-2WM
- reads, writes and calculates with money MALS-12NA

Students:

- read amounts in cents
- read amounts in dollars and cents
- write amounts in cents, eg 35 cents is written as 35c [N]
- write amounts in dollars, eg 5 dollars is written as $5 [N]
- write amounts of money using decimal notation [N]
  - write amounts of money involving cents, dollars, and combinations of dollars and cents, eg $0.25, $5.00, $4.75, $89.95 (Communicating, Fluency) [N]
- write amounts of money in words [L]
  - complete a deposit form using words and decimal notation (Communicating, Understanding, Fluency) [L, N, PSC]
- use the language of money in a range of contexts, eg ‘dollars’, ‘cents’, ‘purchases’, ‘cost’, ‘change’ [L]
- add coins of the same denomination [N]
- add coins of different denominations [N]
- add notes of the same denomination [N]
- add notes of different denominations [N]
- combine a range of coins to demonstrate equivalence of value, eg 2×20 cent coins and 1×10 cent coin is equivalent to a 50 cent coin, 6×5 cent coins is equivalent to 3×10 cent coins [N]
- combine a range of notes to demonstrate equivalence of value, eg $2\times\$5$ notes and $1\times\$10$ note is equivalent to a $20 note [N]
- calculate the amounts of money using mental, written and/or calculator strategies to tender for goods or services [N, PSC]
- recognise the cost of goods or services, eg read price tags attached to clothing, identify the cost of items in a supermarket as indicated on the shelf, read a notice board at a theatre to determine the price of entry [N, L, PSC]
  - identify the cost of items up to $10 in value by locating prices, eg a drink at the school canteen is $2, a magazine at the supermarket is $4.75 (Understanding, Problem Solving) [N, PSC]
  - identify the cost of items up to $100 in value by locating prices, eg a meal at a restaurant is $22, a jacket is $80, a pair of sunglasses is $99.95 (Understanding, Problem Solving) [N, PSC]
- estimate amounts of money to tender for goods or services [N, CCT, PSC]

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Number and Algebra

Money 2

- estimate the cost of a range of items and select the appropriate coin or note to pay for the items, eg select a $2 coin to pay for a drink or snack, select a $20 note to pay for a t-shirt, estimate that a $50 note will be needed to pay for a number of items at a supermarket (Communicating, Understanding, Fluency) [N, CCT, PSC]

- calculate the amount of change due in relation to a transaction for goods or services, using mental, written and/or calculator strategies [N]
- estimate the amount of change due in relation to a transaction for goods or services [N, CCT, PSC]
  - estimate the amount of change due for a purchase and check using a calculator, eg the change due for a purchase of $3.50 if a $5 note is tendered (Fluency, Problem Solving) [N, CCT, PSC]

Mathematics • Life Skills

Number and Algebra

Money 3

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- applies a range of mathematical strategies to solve problems MALS-2WM
- uses reasoning to recognise mathematical relationships MALS-3WM
- makes informed decisions about purchasing goods and services MALS-13NA

Students:

- recognise the relationship between value and price of a range of goods and services [WE]
- compare costs of goods and services [CCT]
  - calculate discounts and compare this to full price (Fluency, Reasoning) [N, CCT]
  - compare the cost of goods using price comparison websites (Reasoning, Fluency) [CCT, ICT, PSC]
  - compare, using the internet, the interest rates and other costs for loans and investments (Reasoning, Fluency) [ICT, PSC]
- determine the value of a range of goods and services [N, PSC]
  - investigate 'unit pricing' used by retailers and use this to determine the best buy (Understanding, Fluency) [N, CCT, PSC]
  - determine the value of 'deals' when purchasing goods or services, eg buy-one-get-one free, buy-one-get-another-half-price (Problem Solving, Fluency) [N, CCT]
  - determine the costs involved when purchasing via different mediums, eg cash, lay-by, credit card, loans, online (Problem Solving, Reasoning) [N, CCT]
- identify the implications of terms and conditions, eg fees, penalties, interest, warranties [L, CCT, PSC, EU]
- investigate the process of refunding and exchanging goods [L, PSC, EU]
  - recognise the difference between refunding and exchanging goods (Communicating, Understanding) [PSC]
  - recognise how refund and exchange policies vary between businesses, eg time limits, condition of the product, sale items (Understanding, Reasoning) [PSC, L, EU]
  - understand the process involved when refunding or exchanging an item, such as producing a receipt as proof of purchase (Understanding) [PSC, EU]
- recognise the relationship between warranties and value [L, PSC]
  - recognise the purpose of a warranty, eg for refund, exchange, repair of faulty goods or services (Communicating, Understanding, Reasoning) [PSC, EU]
  - identify types of goods and services that offer warranties (Understanding)
  - recognise how warranty policies vary between businesses, eg length of warranty, what is covered, cost, receipt as proof of purchase, registering online, extended warranties (Communicating, Understanding, Reasoning) [PSC, L, EU]
  - demonstrate understanding of why we would purchase a warranty (Communicating, Reasoning)

Mathematics • Life Skills

Number and Algebra

Money 4

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- applies a range of mathematical strategies to solve problems MALS-2WM
- plans and manages personal finances MALS-14NA

Students:

- identify financial matters which influence daily life, eg spending, earning, saving [PSC]
  - allocate amounts of money from an allowance for specific purposes, eg 'From my $10 allowance I need to keep $4 for pool entry, so I have $6 to spend or save'(Communicating, Fluency, Problem Solving) [N, PSC]
- calculate earnings from a range of sources, eg allowance, casual or part-time work [N, WE]
  - use a pay slip to determine amount of pay (Understanding) [L, WE]
  - calculate a week's wage given the hourly rate of pay and number of hours worked (Fluency) [N, WE]
  - read and interpret a timesheet to calculate weekly earning (Fluency) [L, N, WE]
- interpret information from a variety of bills [L, N]
  - recognise common terms used on bills, such as 'amount due', 'interest charged', 'discount', 'due date' (Understanding) [L, PSC]
  - interpret the variety of payment options, eg BPAY, direct debit, phone payments using credit card (Communicating, Understanding) [PSC, L]
  - interpret information presented graphically, eg electricity usage (Communicating, Understanding) [L, PSC]
- manage income and expenditure [N, PSC]
  - check bank statements online (Understanding, Fluency) [N, ICT, PSC]
  - investigate different methods for making payments, eg direct debit (Understanding) [PSC]
  - use ICT to manage accounts, eg alerts and reminders via SMS and email (Understanding, Fluency) [L, ICT, PSC]
- balance expenses with available funds [N, PSC]
  - identify personal funds available for specific purposes, eg 'From my weekly wages I have saved $30 this month which I can spend at the movies on Saturday' (Communicating, Fluency, Problem Solving) [N, PSC]
  - calculate the amount of time it will take to save for items at a specific amount per week or month (Fluency, Problem Solving) [N, PSC]
  - develop a budget, with or without ICT, to meet personal financial needs (Communicating, Understanding, Fluency, Problem Solving) [N, ICT, PSC]
- identify and describe financial terms, eg income, expenditure, saving, borrowing, interest [L]
  - use a variety of banking services, eg over the counter, ATM, EFTPOS, cheque book, telephone banking, internet banking, credit cards (Understanding, Fluency) [ICT, PSC]

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Number and Algebra

Money 4

- keep and check records of financial transactions, eg keep card/PIN confidential and in a safe place, retain card and receipt after using ATM, retain and check receipts after purchasing goods and services, record receipt number when using telephone or internet services to make payments (Understanding, Problem Solving) [L, N, ICT, PSC]
- retain and review bank statements (Understanding, Problem Solving) [L, N, PSC]

Mathematics • Life Skills

Number and Algebra

Patterns and Algebra 1

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- uses reasoning to recognise mathematical relationships MALS-3WM
- recognises and continues repeating patterns MALS-15NA

Students:

- recognise what comes next in a repeating pattern of familiar objects, eg blue button, red button, blue button, red button, _____ [N]
  - copy a pattern involving familiar objects (Understanding, Fluency)
  - complete a pattern involving familiar objects, eg a place setting at a dinner table, put a program on every second chair (Communicating, Understanding, Fluency)
- recognise what comes next in a simple pattern of shapes

  eg  [N]
  - recognise repeating patterns in a range of contexts, eg paving patterns, wallpaper, Aboriginal artwork (Understanding) [AHC]
- recognise what comes next in a simple sound or action pattern, eg two claps, one clap, two claps, _____ [N]
  - recognise repeating patterns in a range of contexts, eg dance, music (Understanding)
- identify patterns used in familiar activities such as games, eg dominoes, Mahjong [A]
- recognise when an error occurs in a pattern and describe what is wrong, eg when making a bracelet, recognise a red bead has been used instead of a blue and correct the error [N, CCT]
- create number patterns using concrete materials [N]
- continue simple number patterns that increase, eg 2, 4, 6, 8, __ [N]
- continue simple number patterns that decrease, eg 9, 7, 5, 3, __ [N]
- describe number patterns when counting forwards or backwards, eg 3, 6, 9, 12,… where three is added each time [L, N]

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Number and Algebra

Patterns and Algebra 2

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- applies a range of mathematical strategies to solve problems MALS-2WM
- calculates missing values by completing simple number sentences MALS-16NA

Students:

- complete number sentences involving one operation by calculating missing values, eg find $\square$ if $\square + 5 = 8$; find $\square$ if $\square \times 3 = 12$ [N]
  - describe strategies for calculating missing values (Communicating, Understanding) [CCT]
- use a number sentence to solve a given problem, eg 'I have $25 and the CD costs $31. How much more money do I need to purchase the CD?' This can be solved by $31 – $25 = $\square$ (Problem Solving) [N, PSC]

Mathematics • Life Skills

Measurement and Geometry

Time 1

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- recognises time in familiar contexts MALS-17MG

Students:

- sequence regular daily activities
  - use a pictorial, written or electronic diary or timetable to sequence activities (Communicating, Understanding, Fluency)
- demonstrate an awareness of the passage of time, eg cooking an egg using an egg timer is quicker than the lunch period in a school day
- recognise the language of time in relation to personal activities and events, eg 'It is now 12 o'clock and it's time for lunch', 'It is time to pack up because the bus will be here in 10 minutes' [L, N, PSC]
- associate familiar activities with times of the day [PSC]
  - recognise an association between a time of the day and a range of familiar activities, eg morning and evening activities (Communicating, Understanding) [PSC]
- associate familiar activities that occur across days and weeks
  - identify activities that occur on weekdays, eg school and class timetables, after-school activities (Understanding) [PSC]
  - identify activities that occur on the weekend, eg sport, outings (Understanding) [PSC]
  - identify activities that occur on specific days and at specific times, eg gym group is on Wednesday evenings during school terms, the dance is held every second Saturday in the afternoon (Understanding) [PSC]
  - associate activities at particular times of the day/year with temperatures and seasons, eg 'I go to swimming lessons in the summer' (Communicating, Understanding, Fluency)[SE]

Mathematics • Life Skills

Measurement and Geometry

Time 2

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- recognises and relates time in a range of contexts MALS-18MG

Students:

- relate time to a personal context [PSC]
  - respond to questions related to time, eg 'What time does your bus leave?' (Communicating, Understanding) [N]
  - identify time related to personal activities, eg 'I need to catch the bus at 13 minutes past 5' (Communicating, Understanding) [N, PSC]
- recognise the language of time in a range of everyday contexts [L]
  - respond to questions involving the language of time, eg 'Did you have your shower in the morning or evening?', 'Will you be going to training this afternoon?' (Communicating, Understanding) [PSC]
- describe activities using the language of time in a range of everyday situations [L, PSC]
  - describe personal activities and events, eg 'I did my homework after dinner last night', 'I will be going to the football tomorrow afternoon', 'There was a delay of half an hour this morning on the school bus', 'I will be going to a barbecue next weekend', 'The holidays are only three weeks away' (Communicating, Understanding) [L, PSC]
- recognise language related to representations of time on a calendar, eg a week is seven days, a weekend is two days, a fortnight is two weeks or 14 days, a month is four weeks or a certain number of days [L, N]
- recognise methods used by other cultures for representing calendar time, eg the use of animal migration patterns by Aboriginal and Torres Strait Islander peoples to indicate seasons [AHC]

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Measurement and Geometry

Time 3

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- applies a range of mathematical strategies to solve problems MALS-2WM
- reads and interprets time in a variety of situations MALS-19MG

Students:

Clocks and Watches

- read and relate 'hour', 'half hour,' 'quarter hour' and 'minutes' in analog and digital format in a range of contexts [L, N]
  - interpret digital formats of time to determine which numbers represent hours and which numbers represent minutes (Understanding) [L, N]
  - identify minutes and hours on a clock face (Understanding) [L, N]
  - count around a clock face by fives to determine minutes past the hour (Communicating, Fluency) [N]
- understand the relationship between analog and digital time, eg '12:30 is the same as half past 12' [N, CCT]
- identify and relate am and pm on digital clocks or watches, eg set an alarm clock for 7 am [N]
- apply understanding of the passage of time to plan or participate in a range of activities or events [PSC]

Timetables

- read and interpret a written timetable in a range of formats and variety of contexts, eg coordinating travel arrangements [L, N]
  - read and follow an individual sequence chart, or timetable, for a range of activities (Understanding) [L, N, PSC]
  - read and follow a school timetable for group or class activities (Understanding) [L, PSC]
  - investigate and use the internet to determine travel arrangements by using online transport timetables (Fluency, Problem Solving) [L, N, ICT, PSC]

Calendars and Planners

- identify the names or symbols for days of the week on a calendar [L, PSC]
- identify the months of the year on a calendar [L, PSC]
- locate special days and events on a calendar, eg 'Anzac Day is on the 25th of April' [L, PSC]
  - locate birthdays of significant people on a calendar, eg family, friends (Understanding) [L, PSC]
- identify representations of time on a calendar, eg week, weekend, fortnight, month [L, N]
  - identify number of days, weeks, months, between one event and another, eg 'It's three days until the weekend', 'There are four more weeks until the end of term' (Communicating, Understanding, Fluency) [N, PSC]

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Measurement and Geometry

Time 3

- recognise differing notations for the date, eg 5 September 2012 is represented as 2012.9.5 in Asian cultures [A]
- recognise that calendars are used to plan events and activities, eg school term plan in the newsletter, coming events in the newspaper [PSC]

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Measurement and Geometry

Time 4

Outcomes

A student:

• responds to and uses mathematical language to demonstrate understanding	MALS-1WM
• applies a range of mathematical strategies to solve problems	MALS-2WM
• uses reasoning to recognise mathematical relationships	MALS-3WM
• calculates and measures time and duration in everyday contexts	MALS-20MG

Students:

- identify the duration of a range of activities and events for a variety of purposes [N, CCT]
  - select a track of music to fit a time frame, eg for a dance piece, a multimedia presentation (Problem Solving) [N, PSC]
  - identify length of time of a movie to determine if the activity fits into a personal schedule (Problem Solving) [N, PSC]
- measure and calculate the time taken for a variety of activities or events, eg use a stopwatch to time a race [N]
  - record starting and finishing times to calculate the duration of an activity or event (Communicating, Understanding, Fluency) [N]
  - use addition/subtraction strategies to calculate the length of time of an activity or event (Fluency) [N]
- recognise that there are differences in time zones around the world [PSC]
- identify countries in the Asia-Pacific region that are in the same time zone as Australia [A]
- compare and calculate the local time in a range of places nationally and internationally [L, N, CCT]
  - identify time differences of various locations, eg London is ten hours behind Sydney (Understanding) [L]
  - use appropriate addition/subtraction strategies to calculate the local time in a particular location, eg given that London is 10 hours behind Sydney, find the time in London when it is 6 pm in Sydney (Fluency) [N]
  - solve problems about international time in everyday contexts, eg determine whether a soccer game in another country can be watched live on television during the day (Problem Solving) [N, CCT]
  - recognise the influence of daylight saving on local time (Understanding, Reasoning) [N]

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Measurement and Geometry

Time 5

Outcomes

A student:

• responds to and uses mathematical language to demonstrate understanding	MALS-1WM
• applies a range of mathematical strategies to solve problems	MALS-2WM
• uses reasoning to recognise mathematical relationships	MALS-3WM
• organises personal time and manages scheduled activities	MALS-21MG

Students:

- identify the amount of time needed for a range of activities [N]
  - recognise that specific activities require a particular amount of time, eg 'I need half an hour to have a shower and get dressed', 'It takes me 10 minutes to walk from home to the railway station' (Understanding) [N, PSC]
- make choices and decisions about activities on the basis of time available, eg 'I can't make that movie because I have training at that time' [N, PSC]
- schedule events over a day or week taking into account a range of activities and personal responsibilities [PSC]
  - identify priorities in relation to personal time, and discriminate between essential and non-essential activities (Communicating, Understanding, Reasoning) [PSC]
  - plan personal time over a day or a week so that activities do not clash (Problem Solving) [PSC, N]
- prepare and follow a personal timetable/schedule [L, N, CCT, PSC]
  - use electronic formats of calendars and planners (Fluency) [L, PSC]
  - use a calendar/diary to plan for regular activities, eg swimming every second Friday, PE each Tuesday (Understanding, Fluency) [N, PSC]
  - use a calendar to plan events and activities, eg camp, birthday party (Understanding, Fluency) [N, PSC]
  - use a calendar or planner to calculate time for particular activities, eg block out three weeks for completion of a school project (Understanding, Fluency) [N, PSC]

Mathematics • Life Skills

Measurement and Geometry

Measurement 1

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- estimates and measures in everyday contexts MALS-22MG

Students:

- recognise attributes that can be measured, eg length, temperature, mass, capacity, area
- recognise the language associated with attributes of length, temperature, mass, capacity and volume, area
    - length, eg short, tall, higher than, lower than, the same as, near, far, closer [L]
    - temperature, eg hot, cold, warm, lukewarm, freezing, boiling, hotter, colder [L]
    - mass of objects, eg light, heavy, harder to push/pull, heavier, lightest [L]
    - capacity and volume, eg full, empty, half-full, has more/less, will hold more/less [L]
    - area, eg bigger/smaller than, the same as, surface [L]
- make comparisons based on attributes that can be estimated and measured, eg 'I am taller than my brother', 'John is the tallest in the class' [N, CCT]
    - height, eg taller than, shortest
    - length, eg longer than, shorter than
    - temperature, eg hotter than, colder than
    - mass, eg heavier, lighter
    - capacity, eg fullest, emptier
    - area, eg bigger, smaller, smallest
- recognise the appropriate device for measuring attributes of length, temperature, mass, capacity and volume: [CCT]
    - length, eg ruler, measuring tape, trundle wheel, odometer
    - temperature, eg thermometer, oven dial
    - mass, eg scales, weigh station
    - capacity, eg measuring cup, measuring spoon
    - ‣ investigate how the odometer of a car can measure distance (Understanding)
- recognise that some countries use different units of measurement [IU]

Mathematics • Life Skills

Measurement and Geometry

Measurement 2

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- uses reasoning to recognise mathematical relationships MALS-3WM
- recognises and uses units to estimate and measure length MALS-23MG

Students:

- recognise features of an object associated with length that can be estimated and measured, eg length, breadth, height [L, N]
- use informal units to estimate and measure length, eg measure the length of a table in equal hand spans, without gaps or overlaps [N]
  - compare and order two or more lengths or distances using informal units (Communicating, Understanding, Problem Solving) [N, CCT]
- recognise the appropriate unit of measurement and its abbreviation for measuring length, eg centimetres (cm), metres (m), kilometres (km) [L, CCT]
- select and use the appropriate unit and device for measuring length, eg measure the height of students in the class using a metre ruler and record the results in a table [N, CCT]
- recognise the relationship between commonly used units of measurement for length, eg 100 cm = 1 metre [N, CCT]
- estimate the length of everyday objects and check using a measuring device, eg estimate the length of a room and check using a measuring tape [N, CCT]
  - identify the concept of measurement in a problem (Understanding) [N]
  - select and use appropriate strategies, including calculations, to solve the problem (Communicating, Fluency, Problem Solving) [N]
- convert larger units to smaller units, eg 3 m = 300 cm [N]

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Measurement and Geometry

Measurement 3

Outcomes

A student:

• responds to and uses mathematical language to demonstrate understanding	MALS-1WM
• applies a range of mathematical strategies to solve problems	MALS-2WM
• selects and uses units to estimate and measure mass	MALS-24MG

Students:

- recognise features of an object associated with mass that can be estimated and measured, eg weight
- use informal units to estimate and compare mass, eg 'This book is heavier than the other one'
  - compare and order the masses of two or more objects by lifting them and then check using an equal arm balance (Communicating, Understanding, Problem Solving) [N, CCT]
- recognise the appropriate unit of measurement and its abbreviation for measuring mass, eg grams (g), kilograms (kg) [L, CCT]
- select and use the appropriate unit and device to measure mass, eg weigh a piece of steak using kitchen scales and record as an ingredient for a recipe
- recognise the relationship between commonly used units of measurement for mass, eg 1000 g = 1 kg [N, CCT]
- estimate the mass of everyday objects and check using a measuring device, eg estimate the weight of a soccer ball then check using scales [N, CCT]
  - identify the concept of measurement in a problem (Understanding) [N]
  - select and use appropriate strategies, including calculations, to solve the problem (Communicating, Fluency, Problem Solving) [N]
- convert larger units to smaller units, eg 3 kg = 3000 g [N]

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Measurement and Geometry
Measurement 4

Outcomes
A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- uses reasoning to recognise mathematical relationships MALS-3WM
- selects and uses units to estimate and measure volume and capacity MALS-25MG

Students:

- use informal units to estimate and measure capacity, eg count the number of times a glass can be filled and emptied into a jug [N]
- use informal units to estimate and measure volume, eg count the number of same sized marbles required to fill a box, ensuring there are no large spaces [N]
    - compare and order the volume of two or more models by counting the number of blocks used in each model (Communicating, Understanding, Problem Solving) [N, CCT]
- recognise the appropriate unit of measurement and its abbreviation for measuring capacity, eg millilitres (mL), litres (L) [L, CCT]
- recognise the appropriate unit of measurement and its abbreviation for measuring volume, eg follow the instructions on a medicine bottle to measure the correct amount of medicine using a medicine glass [L, CCT]
- select and use the appropriate unit and device for measuring volume and capacity, eg a medicine glass for medicine, measuring cups for recipes [N, CCT]
- recognise the relationship between commonly used units of measurement for volume and capacity, eg 1000 mL = 1 L [N, CCT]
- estimate the capacity of everyday objects and check using a measuring device, eg estimate the capacity of a bucket then check with a measuring jug [N, CCT]
    - identify the concept of measurement in a problem (Understanding) [N]
    - select and use appropriate strategies, including calculations, to solve the problem (Communicating, Fluency, Problem Solving) [N]
- convert larger units to smaller units, eg 3 L = 3000 mL [N]

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Measurement and Geometry

Measurement 5

Outcomes

A student:

• responds to and uses mathematical language to demonstrate understanding	MALS-1WM
• uses reasoning to recognise mathematical relationships	MALS-3WM
• applies formal units to estimate and calculate area	MALS-26MG

Students:

- use informal units to estimate and calculate area, eg count the number of equal sized pieces of paper required to cover a table, without gaps or overlaps [N]
  - compare the area of two similar shapes by cutting the shapes out and placing one over the other (Communicating, Understanding, Problem Solving) [N, CCT]
- recognise the appropriate unit of measurement and its abbreviation for measuring area, eg square centimetres $\left(\text{cm}^2\right)$, square metres $\left(\text{m}^2\right)$ [L, CCT]
- select and use the appropriate unit and device for measuring area, eg measure area using a grid overlay [N, CCT]
- estimate the area of everyday objects and check using a measuring device, eg estimate the area of the classroom then check with a tape measure and calculations [N, CCT]
  - identify the concept of measurement in a problem (Understanding) [N]
  - select and use appropriate strategies, including calculations, to solve the problem (Communicating, Fluency, Problem Solving) [N]

Mathematics • Life Skills

Measurement and Geometry

Two-dimensional and Three-dimensional Space 1

Outcomes

A student:

• responds to and uses mathematical language to demonstrate understanding	MALS-1WM
• applies a range of mathematical strategies to solve problems	MALS-2WM
• uses reasoning to recognise mathematical relationships	MALS-3WM
• recognises, matches and sorts three-dimensional objects and/or two-dimensional shapes	MALS-27MG

Students:

- recognise three-dimensional objects in the environment [N]
  - identify and name three-dimensional objects that are used in everyday situations, eg cones, cubes and cylinders (Communicating, Understanding) [L]
  - identify three-dimensional objects in pictures, computer displays and within the environment (Understanding) [CCT]
- match three-dimensional objects based on an attribute, eg shape, size, function [N]
- sort three-dimensional objects based on an attribute, eg shape, colour, size, function [N, CCT]
  - sort items on the basis of their shape, size, function, eg crockery, cutlery, sports equipment, clothes for washing (Understanding) [N, CCT]
  - indicate the reasons for sorting items in a particular way (Communicating, Reasoning) [CCT]
  - predict and describe the ways in which particular items can be stacked and test the prediction by stacking them (Communicating, Problem Solving, Reasoning) [CCT]
- recognise three-dimensional objects from different orientations using dynamic geometry software [N, ICT]
- identify two-dimensional shapes found in the environment [N]
- match two-dimensional shapes based on an attribute, eg size, shape [N]
  - match circles, squares, triangles and rectangles (Understanding) [N]
- sort two-dimensional shapes based on an attribute, eg number of corners or sides [N, CCT]
  - circle all the three-sided shapes in a group of mixed shapes (Understanding) [N]
  - construct a table classifying shapes according to the number of angles they have (Communicating, Understanding, Reasoning) [N, CCT]
- match and sort two-dimensional shapes when presented in different orientations using dynamic geometry software [N, ICT]

Mathematics • Life Skills

Measurement and Geometry

Two-dimensional and Three-dimensional Space 2

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- applies a range of mathematical strategies to solve problems MALS-2WM
- identifies the features of three-dimensional objects and/or two-dimensional shapes and applies these in a range of contexts MALS-28MG

Students:

- describe the features of common three-dimensional objects using everyday language, eg flat, round, curved [L]
- describe the features of common two-dimensional shapes using everyday language, eg sides, corners [L]
- recognise similarities and differences of a variety of three-dimensional objects in a range of contexts [CCT]
- recognise and describe the attributes of two-dimensional shapes [L, N]
  - identify circles, squares, triangles and rectangles in the built environment (Understanding) [CCT]
  - draw two-dimensional shapes using computer software (Communicating, Understanding, Fluency) [ICT]
- identify the result of putting together (or separating) two-dimensional shapes, eg 'This house shape is made up of a triangle and a square' [CCT]
- apply knowledge of the features of three-dimensional objects in a range of contexts [CCT]
  - pack a lunch box, organise pantry, stack shelves (Problem Solving) [CCT]
  - complete a technology project involving materials of different shapes and sizes, eg quilt for textiles, wood inlay (Problem Solving) [CCT]
  - construct and describe models using a variety of three-dimensional objects (Communicating, Understanding, Problem Solving) [CCT]
- apply knowledge of the features of two-dimensional shapes in a range of contexts [CCT]
  - make representations of two-dimensional shapes using a variety of materials (Communicating, Understanding) [CCT]
  - put a ticket/card into the correct slot in a machine (Understanding, Reasoning) [CCT]

Mathematics • Life Skills

Measurement and Geometry

Position 1

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- responds to and uses the language of position in everyday contexts MALS-29MG

Students:

- recognise and respond to the language of position in a range of contexts [L]
  - identify preference for a position in response to a question, eg 'Would you rather lie on your side or sit in the chair?', 'Would you rather sit next to John or Sam?' (Communicating, Understanding)
  - follow spoken instructions relating to the language of position, eg 'Put your bag on the top hook', 'Take the books from the cupboard behind the desks', 'Please move inside the carriage' (Understanding) [PSC]
  - follow symbols and written instructions relating to the language of position, eg follow arrows to locate an office on an upper floor, follow symbols to carry a container right side up, follow written instructions to stack items in a storeroom (Understanding, Fluency) [PSC]
- use the language of position [L]
  - indicate the position of objects or buildings in response to a question, eg 'The books are on the shelf in the classroom', 'The seats are under the trees in the playground', 'The supermarket is next to the garage in the main street', 'The yellow tulips are in the middle of the row in the garden' (Communicating, Understanding) [PSC]
  - describe the position of objects or buildings in a range of contexts, eg 'I went to the ticket office inside the railway station', 'The bus stop is opposite the main gate', 'Appliances are located on the ground floor', 'This lift goes to the upper level', 'Tickets are purchased at the office beside the turnstiles' (Communicating, Understanding) [PSC]
  - give directions in a range of contexts, eg 'Stand behind the line to throw the ball', 'Walk towards the doorway', 'Turn left at the top of the stairs'(Communicating, Understanding) [PSC]

Mathematics • Life Skills

Measurement and Geometry

Position 2

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- applies a range of mathematical strategies to solve problems MALS-2WM
- recognises that maps and plans are a representation of positions in space MALS-30MG

Students:

- recognise the purpose and functions of maps and plans, eg to provide directions, location of object/features, representations of landforms [SE]
- recognise that buildings can be represented as a plan, eg classroom
- identify how key features such as doors, windows, tables, chairs, cupboards are represented on a plan [CCT]
  - construct or draw a plan showing key features of specific environments, eg classroom, school, community (Communicating, Problem Solving) [N, CCT]
  - locate floor plans of properties for sale on the internet and interpret them (Understanding, Fluency) [ICT, L]
- recognise different cultural representations of maps, including Aboriginal and Torres Strait Islander cultures [AHC]
- identify inventions that have assisted map reading, eg the compass invented in China [A]

Mathematics • Life Skills

Measurement and Geometry

Position 3

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- applies a range of mathematical strategies to solve problems MALS-2WM
- uses maps and plans in a range of contexts MALS-31MG

Students:

- use maps and plans to locate position and follow routes [N]
  - locate seat on a plan of a movie theatre (Understanding) [N]
  - locate classroom on a plan of the school (Understanding) [N]
  - locate house or street using a print or online map, eg Google Earth (Understanding) [ICT]
  - use a map to show direction from classroom to the library (Communicating, Understanding, Problem Solving) [N]
  - identify direction on a map, eg north/south, left/right (Communicating, Understanding) [N]
- use maps for a variety of purposes, eg use a street directory, web-based maps, GPS technology [N, ICT]
  - use a map to find a location (Understanding, Problem Solving) [N]
  - locate specific sites using grid references in street directories and road maps (Communicating, Understanding, Problem Solving) [N, CCT]
  - identify and describe features of an environment using map keys/legends (Communicating, Understanding) [L, N, CCT]

Mathematics • Life Skills

Statistics and Probability

Data 1

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- recognises data displayed in a variety of formats MALS-32SP

Students:

- recognise that information can be presented in tables and graphs, eg picture graph to show favourite foods, column graph to show classroom gender, sector graph to represent sports students play, table to record daily rainfall [CCT]
- identify information on graphs using features such as heading/title of graph, labels on axes, scale, key [L]
- recognise data displayed in different ways, eg table and graph to show daily temperatures over a week
- recognise ways in which data about the environment can be displayed, eg climate, population growth [SE]

Mathematics • Life Skills

Statistics and Probability
Data 2

Outcomes
A student:

• responds to and uses mathematical language to demonstrate understanding	MALS-1WM
• applies a range of mathematical strategies to solve problems	MALS-2WM
• uses reasoning to recognise mathematical relationships	MALS-3WM
• gathers, organises and displays data	MALS-33SP

Students:

- collect data about themselves and their environment [L, N]
  - pose a question to be answered using a survey, eg 'What is the cultural background of students in the class?' (Communicating, Understanding) [CCT, IU, DD]
  - record collected data using a variety of processes, eg concrete materials, symbols, words, tally marks (Communicating, Understanding) [N]
- sort collected data into groups [CCT]
- display data using tables, column graphs, line graphs and/or pie charts [N, CCT]
  - use appropriate strategies, including ICT, to display data (Communicating, Understanding, Fluency) [ICT, N]
  - follow conventions for displaying data including equal spacing, same-sized symbols, key for symbols, headings, labels for axes (Communicating, Understanding, Fluency) [L, N]
- gather and display data for a specific purpose, eg to determine the range of eye colour represented in a class of students [N, CCT]
  - select an appropriate method and use this to collect data, eg survey, questionnaire (Communicating, Fluency, Problem Solving) [N]
  - sort collected data appropriately (Communicating, Understanding, Fluency) [N, CCT]
  - decide on the most appropriate way to display the data collected, eg line graph, pie chart, table (Understanding, Fluency) [N, CCT]
  - construct data display (Communicating, Understanding, Fluency) [N, CCT]
  - communicate and interpret findings from collected data (Communicating, Reasoning) [L, N, CCT]

Mathematics • Life Skills

Statistics and Probability

Data 3

Outcomes

A student:

• responds to and uses mathematical language to demonstrate understanding	MALS-1WM
• applies a range of mathematical strategies to solve problems	MALS-2WM
• uses reasoning to recognise mathematical relationships	MALS-3WM
• interprets information and draws conclusions from data displays	MALS-34SP

Students:

- interpret information presented in tables and graphs to answer questions, eg 'The columns show that there are more boys than girls', 'Swimming is the most popular sport among students in our class' (Problem Solving) [L, CCT]
- interpret graphs and tables from a variety of sources, eg newspapers, television, internet [L, CCT]
- compare tables and graphs constructed from the same data to determine which is the most appropriate method of display [CCT]
- draw conclusions on the basis of the information displayed in tables and graphs [CCT]

Mathematics • Life Skills

Statistics and Probability

Chance 1

Outcomes

A student:

- responds to and uses mathematical language to demonstrate understanding MALS-1WM
- uses reasoning to recognise mathematical relationships MALS-3WM
- recognises and uses the language of chance in a range of contexts MALS-35SP

Students:

- distinguish between events that are certain and uncertain, eg having a birthday, winning a lottery [CCT]
- describe the likelihood of familiar events using informal terms, eg might, certain, probable, likely, unlikely, possible, impossible [L]
    - predict possible outcomes in everyday situations, eg decide what might occur in a movie before the ending of the story (Communicating, Reasoning) [CCT]
    - ask questions related to the likelihood of events, eg 'Do I need to take my umbrella if the sky is grey?' (Communicating, Reasoning) [CCT]
    - use the language of chance in everyday situations (Communicating, Understanding) [L]
- order events from least likely to most likely [CCT]

Mathematics • Life Skills

Statistics and Probability

Chance 2

Outcomes

A student:

• responds to and uses mathematical language to demonstrate understanding	MALS-1WM
• applies a range of mathematical strategies to solve problems	MALS-2WM
• uses reasoning to recognise mathematical relationships	MALS-3WM
• recognises the elements of chance and probability in everyday events	MALS-36SP

Students:

- recognise the element of chance in familiar events, eg tossing a coin, rolling dice [N]
- interpret numerical values assigned to the probability of events occurring in real life contexts, eg 50 : 50, 1 in 2, 1 in 100, 1 in a million [N]
    - use the internet to determine the likelihood of winning prizes in various lottery divisions (Fluency, Problem Solving) [ICT, N]
    - evaluate the probability of winning prizes in lotteries and other competitions (Communicating, Reasoning) [N, CCT]
- conduct simple experiments to determine probability of an outcome, eg spin a spinner twenty times and predict, record and communicate the results [N, CCT]