Western Australian Curriculum

Mathematics

Scope and sequence | Pre-primary–Year 6

Revised curriculum | For familiarisation in 2025

**Acknowledgement of Country**

Kaya. The School Curriculum and Standards Authority (the Authority) acknowledges that our offices are on Whadjuk Noongar boodjar and that we deliver our services on the country of many traditional custodians and language groups throughout Western Australia. The Authority acknowledges the traditional custodians throughout Western Australia and their continuing connection to land, waters and community. We offer our respect to Elders past and present.

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Overview

The current Western Australian Curriculum: Mathematics was adopted from the Australian Curriculum version 8.1.

The revised Western Australian Curriculum: Mathematics has been adapted from the current Western Australian Curriculum, the New South Wales Curriculum and Australian Curriculum version 9, and has been contextualised for the *Western Australian Curriculum and Assessment Outline*.

Guide to reading this document

The Scope and sequence shows the **mandated** curriculum for teaching, written as **content descriptions** across year levels so that a sequence can be viewed across the years of schooling from Pre-primary to Year 10. The **examples** illustrate the content and are **not mandated**. Teachers should use examples relevant to the context of the school and needs of their students.

This Scope and sequence shows the Pre-primary to Year 6 Mathematics curriculum organised by phases of learning: Pre-primary–Year 2 and Years 3–6.

The document is organised by three Mathematics strands: Number and algebra; Measurement and geometry; and Probability and statistics.

The **Number and algebra** strand for **Pre-primary to Year 6** includes: Understanding number; Understanding equalities and inequalities; Patterns and relationships; Calculating with number; Financial mathematics; and Modelling with number.

The **Measurement and geometry** strand for **Pre-primary to Year 2** includes: Two-dimensional space and structures; Three-dimensional space and structures; and Non-spatial measurement.

The **Measurement and geometry** strand for **Years 3–6** includes: Two-dimensional space and structures; Three-dimensional space and structures; Non‑spatial measurement; and Modelling with measurement and geometry (**Years 4–6** only).

The **Probability and statistics** strand for **Pre-primary to Year 6** includes: Probability and Statistics.

The tables below outline the subject organisation for the Pre-primary to Year 6 Mathematics curriculum.

**Pre-primary–Year 2**

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| **Number and algebra** | | | | | |
| Understanding  number | Understanding equalities and inequalities | Patterns and relationships | Calculating with number | Financial  mathematics | Modelling with number |

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| --- | --- | --- |
| **Measurement and geometry** | | |
| Two-dimensional space and structures | Three-dimensional space and structures | Non-spatial measurement |

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| **Probability and statistics** | |
| Probability | Statistics |

**Years 3–6**

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| **Number and algebra** | | | | | |
| Understanding  number | Understanding equalities and inequalities | Patterns and relationships | Calculating with number | Financial  mathematics | Modelling with number |

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| --- | --- | --- | --- |
| **Measurement and geometry** | | | |
| Two-dimensional space and structures | Three-dimensional space and structures | Non-spatial measurement | Modelling with measurement and geometry |

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| **Probability and statistics** | |
| Probability | Statistics |

Pre-primary–Year 2

Strand: Number and algebra

Sub-strand: Understanding number

|  |  |  |
| --- | --- | --- |
| Pre-primary | Year 1 | Year 2 |
| Say, read, write and order numbers up to 20, from any starting point. Count collections up  to 20  For example:   * Counting for a purpose, such as counting how many children are in a group so the correct number of items can be collected * Counting forwards and backwards by ones from a given number * Internalising the principles of counting, including each object must be touched or included exactly once as the numbers are said once in order, the objects can be touched in any order from any starting point and the arrangement does not affect the count, and the last number tells ‘how many’ in the whole collection and does not describe the last object touched * Recognising that numbers represent quantities and ‘zero’ is the same as ‘no items’, and that adding one to the count is one more and removing one from the count is one less * Identifying the number before and after a given number * Understanding and using ordinal numbers, such as Abby will have her turn first, Ben will go second, and Jack will be third | Say, read, write and order numbers to 120 and recognise the repetition of the 0–9 sequence of digits. Skip count collections by twos, fives and tens from zero  For example:   * Counting forwards and backwards by ones from a given number noticing that counting forward by ones is adding one each count, and counting backwards by ones is subtracting one each count * Identifying the number before and after a two-digit number * Exploring hundreds charts to recognise the repetition of digits   A grid of numbers from one to 120 with multiples of 5 highlighted in the fifth column and the tens digit, 8, highlighted in the eighties row   * Ordering numbers using numbered cards or number tracks, considering the size of the numbers * Counting the same collection by ones, twos, fives or tens | Read, write and order numbers to at least 1020, including on a number line. Recognise the repetition of the 0–99 sequence of digits, and the role of zero. Skip count forwards and backwards by twos, threes, fives and tens from any starting point  For example:   * Comparing different hundreds charts, such as 101–200 and 701–800 to identify patterns * Identifying the number before and after a given three-digit number * Reading and ordering numbers up to four‑digits, using patterns in the number system, including numbers with zeros in different places, and numbers that look and sound similar, such as 808, 880, 818 and 881 * Recognising features of number lines, such as the even spaces between the markings and the starting point at 0   a number line from zero to ten   * Identifying the missing numbers on the markings for a given number line, such as   a number line from zero to 120 with 20, 60, 70 and 110 missing |
| Subitise, partition and compare small collections  For example:   * Recognising with a quick look the number of objects in a collection and saying the number without counting * Partitioning collections of up to 10 objects in different ways, such as partitioning a collection of six counters into four counters and two counters or into three counters and three counters * Comparing and describing small collections, using the language more, less and same | Explore different ways to represent and partition collections up to 100, including in groups of 10, using concrete materials  For example:   * Recognising that 10 ones is the same as  one 10 * Bundling sticks in groups of 10 and combining these with loose sticks to make two-digit numbers. Trusting that a previously prepared bundle contains 10 sticks * Using concrete materials to represent two‑digit numbers, then partitioning the number in different ways, such as representing 24 as 10, 10 and 4 or 10 and 14 | Explore different ways to represent and partition two- and three-digit numbers, including in groups of 10 and 10 groups of 10 to make 100, using concrete materials, numbers and symbols  For example:   * Counting and representing large sets of concrete materials by systematically grouping in tens and hundreds * Using models, such as base 10 materials and interlocking cubes to represent and explain grouping * Using concrete materials to partition, rearrange, regroup and rename three-digit numbers in different ways, such as 574 can be shown as 5 hundreds, 7 tens and 4 ones or 57 tens and 4 ones |
|  | Explore partitions of numbers with small collections, using part-part-whole relationships  For example:   * Creating, recording and recognising combinations of two numbers that add up to numbers up to 10, such as partitioning five into four and one or into three and two, including making all possible whole-number combinations * Exploring part-part-whole 10 facts by arranging collections of 10 objects in different ways   10 blocks in a row 5 are green and 5 are purple. Labels are 5 and 5 above the blocks and 10 underneath. Second row of blocks consists of 4 green blocks and 6 purple blocks, labelled with  4 and 6 above them and 10 below.   * Describing combinations for numbers using more than, less than and double, such as ‘five is one more than four’ or ‘double two and one more’ | Explore the relationship between addition and subtraction with small collections, using part‑part-whole knowledge, numbers and symbols  For example:   * Exploring combinations of two numbers that add to numbers from 11 up to and  including 20 * Representing the difference between two numbers using concrete materials and diagrams, such as the difference between 7 and 4 is 3   The difference between 7 and 4 represented by blocks  Demonstrating the difference between the numbers 4 and 7 as a 'jump' of 3   * Representing addition and subtraction as inverse operations using concrete materials, drawings and diagrams   Part-part-whole diagram with 18 in the whole section and 11 and 7 in each of the parts below. Under that are equations 18 = 11 + 7 and 11= 18 - 7 |
|  |  | Recall addition and subtraction facts to 10  For example:   * Recalling combinations of two numbers that add up to 10 and related subtraction facts * Using related number facts, such as   , so and |
| Explore grouping and sharing of small collections  For example:   * Role-playing equal sharing, by distributing objects one by one or in groups of two and counting the number in each group to ensure they have the same amount * Sorting collections of items, such as blocks or shells into two groups, identifying those that can be shared into equal groups and those that cannot | Explore different ways to equally group or share small collections  For example:   * Grouping and sharing small collections in different ways using concrete materials, drawings or diagrams, such as splitting a collection of 24 items into equal groups * Using grouping to help count large collections, such as grouping items into fives or 10s and skip counting to find the total * Recognising that the more groups to be made from a quantity, the smaller the size of each group | Explore multiplication and division using repeated addition, equal grouping and arrays  For example:   * Representing multiplication as repeated addition and division as sharing or equal grouping using concrete materials, drawings or diagrams   A diagram showing three containers each holding 3 counters.  Above the containers the numbers 3, 6 and 9 are written connected by arrows indicating skip counting by 3's. To the right of this there is an array of 5 columns with 3 rows of black dots. Each column is circled.  Under the image is the text 15 shared equally between five groups   * Connecting grouping to arrays, determining and distinguishing between the number of rows/columns and the number in each row/column   4 groups of 3 squares are shown each group of 3 is circled  these groups are connected to an array of 3 rows of 4 squares to show that 4 groups of 3 is the same as the array image   * Recognising the commutative property of multiplication using an array   2 rows of 3 dots rotated to show it is the same amount as  3 rows of 2 dots |
|  | Recognise, describe and create a half by dividing a physical whole into two equal parts or a collection into two equal quantities  For example:   * Describing halves in context, such as a half a sandwich and the halves of an orange * Sharing a collection of objects into two equal groups, recognising that one group is half of the whole collection * Cutting identical rectangular pieces of paper into two parts in different ways, recognising that halves must consist of two equal parts   Three separate squares each divided in half by a line. The first divided in half with a horizontal line, the second divided in half with a vertical line and the third divided in half with a diagonal line.Two squares side by side. The first showing a corner of the square separated with a diagonal line. The corner is coloured light orange.  The second shows a vertical line a quarter of the way across the square and the remainder of the square is coloured light orange. The light orange indicates that these squares are not divided in half. | Recognise, describe and create halves, quarters and eighths by repeatedly halving a physical whole or a collection  For example:   * Describing physical representations of fractions using words and numerical representations, such as one quarter as which means one part out of four equal parts * Using repeated halving of a range of shapes, objects or collections to make halves, quarters and eighths, such as partitioning a strip of paper into two equal lengths, then halving the halves naming the four equal parts as quarters, repeating for eighths * Exploring different ways to cut paper squares into halves and quarters, considering questions, such as ‘Are two quarters always the same amount as one half?’   4 squares all divided in half and quarters in different ways. First square divided in half with a vertical line.  Second square divided in half with a diagonal line.  Third square divided in quarters with a vertical and horizontal line and the fourth square divided into quarters with three vertical lines. |

Sub-strand: Understanding equalities and inequalities

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| Pre-primary | Year 1 | Year 2 |
|  |  | Use the equality symbol to indicate the same value in number sentences involving addition and subtraction  For example:   * Using the equality symbol to mean ‘is the same as’, such as recognising the quantities on both sides of the equal sign are the same   Image denotes a visual representation of an equation. 7 butterflies = 3 butterflies + 4 butterflies   * Using the equality symbol to produce true number sentences, such as   or   * Discussing if a given number sentence is true, such as |

Sub-strand: Patterns and relationships

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| Pre-primary | Year 1 | Year 2 |
| Copy and continue repeating patterns in everyday environments using a range of materials, sounds and movement  For example:   * Recognising familiar patterns and repetitions in the natural world and everyday life. For instance, noticing repeated verses in a song or rhyme * Using objects, drawings, movement or sound to witness that the same pattern can be represented in different ways and used to predict what comes next   Image shows a pattern of green triangle, blue dot, blue dot, green triangle, blue dot, blue dot  *clap, jump, jump, clap, jump, jump*  *Image shows a pattern of shell, acorn, acorn, shell, acorn, acorn* | Continue and create repeating patterns. Explore and label repeating patterns to show how many of each element is in a repeat unit (core)  For example:   * Identifying the repeating unit, such as there are three green beads and two orange beads, labelling with symbols, such as g, g, g, o, o   Beads showing a AAABB pattern using colours: green, green, green, yellow, yellow. A speech bubble identifies that each repeat requires three green beads and two yellow beads.   * Continuing patterns in everyday situations, such as days of the week, labelling as M, T, W Th, F, Sa, Su and recognising that there are seven days in a repeat unit * Choosing materials, such as two different types of pasta, to create a pattern that shows a provided number sequence, such as 1, 2, 1, 2, 1, 2 | Recognise and continue increasing or decreasing additive patterns with collections and numbers, and identify missing elements in a pattern  For example:   * Identifying the changes in growing patterns, as repeated addition and making connections to skip counting. Using a calculator to enter 3 and repeatedly add 3, to model the pattern   column of 3 circles linked by an arrow pointing to the right with +3 written above it to two columns of 3 circles linked with an arrow pointing to the right with +3 written above it to 3 columns of 3 circles linked to an arrow pointing to the right with +3 above it to 4 columns of 3 circles   * Identifying missing elements in a given pattern   Image shows a pattern of squares in an array, first image is a column of 2 squares, second image is 2 columns of 2 squares, there is a space showing the missing part of the pattern followed by a fourth array showing 4 columns of 2 squares.  Under the pattern images are numbers representing the total number of squares connected by arrows.  Numbers read 2, 4, ?,8 |

Sub-strand: Calculating with number

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| Pre-primary | Year 1 | Year 2 |
|  | Manipulate collections to add and subtract quantities to 20 and beyond, exploring a range of strategies  For example:   * Exploring strategies, such as counting on, counting back, partitioning and part‑part‑whole knowledge to solve addition and subtraction problems * Using concrete materials to partition quantities to assist in addition and subtraction, such as using ten-frames to calculate   Two ten-frames one above the other. Top ten-frame contains 9 red dots, under that is a ten-frame containing 7 blue dots. These are connected with an arrow pointing right to two more ten-frames. The top one is filled with 9 red dots and one blue dot and the ten-frame under that contains 6 blue dots.   * Using non-count-by-one strategies, such as using doubles for near doubles and combining numbers that add to , such as as double , add * Counting back using the jump strategy for as being | Add and subtract one- and two-digit numbers, using a range of strategies  For example:   * Selecting and applying strategies, such as counting on, partitioning, part-part-whole knowledge, rearranging, regrouping, doubles, near doubles and bridging to 10 * Partitioning and rearranging numbers using concrete and written representations   Two rows of ten blocks and a row of 7 blocks. Below a row of ten blocks and a row of 2 blocks. They are labelled 27 plus 12Two rows od ten blocks labelled 20. A row of seven blocks labelled 7. A row of ten blocks labelled 10. A row of two blocks labelled 2. These are rearranged into three rows of ten blocks labelled 30, and the rows of 7 and 2 blocks adding to 9, with labels.   * Using number lines or hundreds charts by moving along or up and down in tens and ones to solve addition and subtraction problems, such as the jump strategy for   Modelling the jump strategy for 79 - 33, with 79 minus 30 to give 49, and then minus 3 to give 46. Shown on a number line. |

Sub-strand: Financial mathematics

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| Pre-primary | Year 1 | Year 2 |
| Explore making purchases using coins, notes, and debit cards  For example:   * Recognising that money is used to buy things * Sorting coins, notes and debit cards * Using debit cards, notes and coins to  role-play making purchases at a shop, including using the language of ‘dollars’ and ‘cents’ | Explore different payment formats and identify Australian coins and notes, according to their value  For example:   * Arranging Australian coins and notes by value and counting small collections of each with the same denomination * Role-playing transactions, recognising that if you have insufficient money you can’t buy something and if you give too much money you get change   () | Explore and describe the relationship between dollars () and cents (c) and their value in the contexts of spending, saving and donating  For example:   * Identifying that is the same as cents * Counting small collections of coins, using the and c symbols to record amounts * Discussing the benefits of saving and donating, including goals and reasons why people save and donate money * Identifying and comparing the cost of familiar items at the school canteen or stalls at a market, noticing the different ways money is represented, such as , 35c, |

Sub-strand: Modelling with number

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| Pre-primary | Year 1 | Year 2 |
| Explore and represent familiar real-world situations involving adding, removing, grouping or sharing small collections using role-play or concrete materials  For example:   * Using role-play and materials to represent mathematical relationships in stories, such as a group brings three sandwiches, and another group adds four more or students start with 10 apples but eat three during the picnic; drawing a picture and using materials to represent the situation, discussing, and recording the result of the action with a numeral * Using objects to role-play sharing out a collection one-by-one, or handing out equal sized collections for a purpose, such as sharing art materials like crayons, markers and paper | Represent quantities and actions in real-world situations involving adding, taking away, sharing or equal groupings using role-play, concrete materials, drawings or numbers. Describe the meaning of the representations and answers in context  For example:   * Modelling situations, such as keeping track of the number of people on a bus as it stops to pick up and drop off people on the way to Fremantle. Using role-play to represent the situation, explaining connections, such as when people are picked up the number is added to the people already on the bus and recognising the answer as the number of people on the bus when it arrives in Fremantle | Identify and represent real-world situations involving addition, subtraction, simple multiplication or division using objects or diagrams labelled with numbers and symbols that match the actions in the situation. Interpret the meaning of answers in context  For example:   * Modelling situations, such as determining how many juice boxes priced at , can be purchased with 10 $1 coins. Representing the situation using concrete materials, such as grouping 10 $1 coins into pairs, explaining that each group represents the cost of one juice box, counting the groups and recognising that five groups means that five juice boxes can be purchased * Using familiar situations, such as * a fundraising activity where children collect bottles for recycling, earning 10c for each bottle * sharing a raffle prize of biscuits between children * keeping score when playing sport |

Strand: Measurement and geometry

Sub-strand: Two-dimensional space and structures

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| Pre-primary | Year 1 | Year 2 |
| Sort, name and represent familiar two‑dimensional shapes and recognise them within the environment  For example:   * Sorting and naming 2D shapes, such as rectangles, squares, triangles, ovals and circles, based on chosen criteria * Creating familiar shapes using groups of people, such as holding hands to form a circle | Name and classify familiar two-dimensional shapes based on sides and vertices using informal language  For example:   * Classifying familiar 2D shapes, such as triangles, quadrilaterals, circles and ovals according to the number of sides and vertices * Exploring the characteristics of rectangles and squares, such as   A rectangle and a square side by side. Text underneath reads, Both have straight sides and square corners. Both shapes are rectangles.   * Describing a ‘mystery’ shape, so that others can name the shape and give reasons for their choice | Identify and draw two-dimensional shapes and describe their similarities and differences using spatial terms, including opposite, parallel, curved, straight and vertices  For example:   * Drawing 2D shapes, such as triangles, quadrilaterals, circles and ovals, with increasing attention to accuracy * Describing 2D shapes using spatial terms, such as a square and a rectangle are similar quadrilaterals as they both have two pairs of parallel sides, but they are different because all four sides in a square are equal length * Identifying which shape ‘doesn’t belong’ to a given group, explaining the reasoning |
| Explore and compare the length of everyday items to say which is longer and explain reasoning  For example:   * Recognising length as the measure of an object ‘end to end’, such as comparing two leaves side-by-side to determine which is longer * Using everyday language and phrases, such as longer than, taller than and shorter than to explain the comparisons * Explaining why the length of a piece of string remains unchanged whether placed in a straight line or a curve | Directly and indirectly compare lengths, including by counting uniform informal units  For example:   * Using uniform informal units as a ‘go between’ to indirectly compare the length of objects, such as using paper clips or connecting blocks to compare the length of a pencil and scissors * Recognising that the same informal unit must be used repeatedly and explaining the relationship between the size of a unit and the number of units needed | Estimate, measure and compare lengths, by choosing appropriate uniform informal units, and place end to end without gaps or overlaps  For example:   * Choosing suitable uniform informal units and explaining choices, such as using longer units to measure the width of a room * Investigating how gaps and overlaps impact accuracy   A blue line showing 5 sections with one paperclip on top of the line filling one section. Under the blue line 5 paperclips are lined up horizontally end to end showing paperclips overlapping.  The image shows that the 5 paperclips do not reach the end of the blue line.   * Creating an informal unit measuring tape using matchsticks or paper clips as the unit |
|  |  | Explore and directly compare the areas of two shapes by superimposing one over the other  For example:   * Using everyday practical situations to identify area as the total space taken up by a 2D surface, such as the area covered by a rug * Comparing the areas of two similar shapes directly by drawing, tracing, or cutting and pasting * Superimposing similar shapes to compare their areas and using everyday language to explain the comparisons, such as placing a foot against the sole of a shoe or lids on jars |
|  |  | Explore quarter-, half- and full-turns in everyday situations  For example:   * Identifying turns that happen in familiar environments, such as a spinner in a board game (full-turn) or a door opening and closing (quarter-turn) * Performing quarter-, half- and full-turns, using arms or barbecue skewers * Connecting quarter- and half-turns to the minute hand on a clock for the passing of quarter- and half-hours and the language of clockwise and anticlockwise |
| Show and describe position and movement in familiar locations  For example:   * Showing positions of people and objects in both practical and playful situations, and describing using words, such as in, out, under, next to, in between, etc. * Describing movement as part of storytelling, using everyday language * Describing the way to a particular location or object using a sequence of steps to be followed | Give and follow directions within familiar locations  For example:   * Narrating a pathway as part of storytelling, as a sequence of steps using everyday directional language, such as left, right, forward, back, turn and familiar landmarks * Providing verbal directions to a particular point or object within the classroom or school play areas * Carrying out own and peer instructions to move around the school, noticing and addressing any inaccuracies | Locate positions and pathways on simple maps of familiar locations  For example:   * Interpreting simple maps by identifying objects in different locations * Recognising maps as representations seen from above (bird’s-eye-view) * Following a simple route on a map using landmarks and directional language, such as to get to the park, walk towards the pond and then take the path to the left |

Sub-strand: Three-dimensional space and structures

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| Pre-primary | Year 1 | Year 2 |
| Explore familiar three-dimensional objects in the environment  For example:   * Spotting 3D objects and differentiating from 2D shapes * Building with 3D objects, such as construction materials, blocks or loose parts to investigate stacking and rolling | Recognise, sort and name familiar three‑dimensional objects and identify the two‑dimensional shapes that comprise them  For example:   * Naming familiar 3D objects, including cubes, cylinders, cones, spheres and rectangular prisms * Recognising 2D shapes on surfaces of 3D objects, such as a circle visible on the bottom of a glass * Selecting a set of 2D shapes from a collection to match the faces of a provided 3D object | Manipulate, visualise and name familiar three‑dimensional objects, informally describe features and connect to common uses  For example:   * Selecting a 3D object, from a small collection inside a bag, including cubes, cylinders, cones, spheres and rectangular prisms, and describing it by feel, so that others can name the 3D object and give reasons for their choice * Considering how key features of 3D objects, such as flat or curved surfaces are related to common uses (stacking or rolling) |
| Explore capacity and compare containers to say which holds more and explain reasoning  For example:   * Using everyday playful situations to explore capacity as how much a container can hold * Comparing two containers by filling one with liquid and then pouring it into the other, observing if it fills the second container a little bit, half full, full or overflowing | Directly and indirectly compare the capacities of a pair of containers  For example:   * Filling two different containers with liquid, then pouring their contents into two identical transparent containers to compare how much they hold * Exploring containers with the same capacity but different shapes to recognise that a tall narrow container may hold the same amount as a short wide container | Estimate, measure and compare the capacities of different containers using uniform informal units  For example:   * Using a uniform informal unit, such as a yoghurt cup, estimate how many yoghurt cups of water it will take to fill larger containers, pouring water into containers and counting how many cups they can hold * Identifying that the larger the unit, the fewer number of units the container will hold (less yoghurt cups will be needed to fill a container than tablespoons) * Recognising and explaining why containers of different shapes may have the same capacity |

Sub-strand: Non-spatial measurement

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| Pre-primary | Year 1 | Year 2 |
| Explore mass and compare everyday items to say which is heavier  For example:   * Directly comparing everyday items to say which is heavier or lighter, such as a tin of baked beans and a packet of marshmallows * Manipulating objects of varying sizes and weights, such as pillows and rocks to challenge the misconception that larger objects are heavier * Comparing objects of similar size but different weights, such as golf balls and ping‑pong balls | Directly compare the masses of two objects by hefting and using balance scales  For example:   * Exploring the use of tools, such as pulleys, balance scales and seesaws to compare the mass of two objects * Predicting the action of balance scales before placing objects on each side of the scale * Using comparative language, such as heavier and lighter, recognising that the larger (more volume) object is not necessarily the heaviest * Comparing a range of objects to witness relative mass (an object may be lighter than something, but heavier than something else) | Estimate and compare masses of objects using balance scales and uniform informal units  For example:   * Placing an object on one side of the balance scale and estimating the number of counters or blocks needed on the other side of the scale to balance the object * Determining the weight of a lump of playdough using uniform informal units, then reshaping it to witness that the shape of the object does not alter the mass * Ordering the mass of three or more objects and using comparative language to explain the order; lightest, light, heavier, heaviest |
| Sequence days of the week and times of the day, making connections to routines, and compare duration of familiar events using everyday language  For example:   * Exploring the cyclical nature of days of the week, identifying routine days, such as ‘library day’ * Describing sequences of events using words, such as morning, lunchtime, afternoon, nighttime, yesterday, today and tomorrow * Sequencing familiar events, including the representation of time with pictorial timelines * Identifying time as a measurement for practical comparisons, such as noticing that eating a meal takes longer (more time) than brushing your teeth | Read the time on digital clocks and make connections to routines. Explore and describe duration informally in years, months, weeks, days, hours, minutes and seconds  For example:   * Exploring how time on a digital clock is read in hours and minutes, recognising that if the hour numbers are followed by 00, it is read as o’clock and if followed by numbers (minutes), it is read as nine fifteen or ten twenty-five * Discussing events and activities and deciding duration, such as having a drink of water takes seconds, recess lasts minutes and the school day lasts hours | Tell time to the hour, half- and quarter-hour, on analogue and digital clocks. Identify the date and determine the duration between two events in days using a calendar  For example:   * Identifying which hour has passed when the hour hand is not pointing to a numeral   Two concentric circles representing a clock face. In the outer space numbers 1 to 12 are written indicating the hours.  The smaller circle is divided into 12 segments with numbers 1 to 12 written to identify the space between the hours.   * Describing the position of the minute hand on the clock for half, quarter past and quarter to, recognising that the same time can be read in different ways, such as half past four, four-thirty and thirty minutes past four * Finding specific dates on a calendar, such as birthdays and school events and determining how many days are left between today and the event, including when the two dates are in different months |

Strand: Probability and statistics

Sub-strand: Probability

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| Pre-primary | Year 1 | Year 2 |
| Explore and describe familiar events using the everyday language of chance  For example:   * Reading a story to the students, and asking them what might happen next and what cannot possibly happen next * Describing real and imagined situations, such as ‘will happen’, ‘can happen’, ‘might happen’ and ‘cannot happen’ | Describe and reason about the likelihood of familiar events occurring, using the everyday language of chance  For example:   * Expressing the likelihood for events, such as ‘The sun rising in the morning’, ‘Flying home today’, or ‘Rain on sports day’ using terms like cannot happen, unlikely to happen, might happen, or certain to happen * Recognising times and reasoning when things don’t go as expected, such as the school bell not ringing at the end of the day | Classify familiar events involving chance as being ‘possible’ or ‘impossible’ and using the everyday language of chance to compare the likelihood of them happening  For example:   * Distinguishing impossible from unlikely events with statements, such as ‘We never go to the park after school, but it isn’t impossible, as it could happen’ * Comparing the likelihood of events, such as ‘Are we more likely to see a bird or a kangaroo in the playground?’ or ‘Is it more likely we will eat lunch at school or have a picnic in the park?’ |

Sub-strand: Statistics

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| Pre-primary | Year 1 | Year 2 |
|  |  | Describe and interpret real-life data represented in lists, tables and one-to-one block and picture graphs  For example:   * Interpreting a picture graph and discussing questions, such as ‘Are there more grapes or more bananas?’, ‘Which fruit is there most of?’. Select a fruit not in the display (pears) and ask ‘How many people brought pears? How can you tell?’   Image of a picture graph headings down left side and images of fruit in rows next to the headings. Apple then 4 equally spaced apples Orange then 3 equally spaced oranges Banana then 2 equally spaced bananas Grapes then three equally spaced bunches of grapes   * Interpreting a table, reading the headings and categories to determine what data is being shown and answering questions, such as ‘How many children were asked about their favourite sport?’   Table with the headings, Favourite sport event and Number of Children. Long Jump 9 High Jump 3 Pass ball 7 Running 4 Flag relay 7 |
| Collect, group and compare data using objects and images to make inferences  For example:   * Sorting a collection of leaves from the school grounds to co-create a visual display. Making comparative statements based on the data, such as ‘There are more yellow than brown leaves’ * Using objects to organise data when exploring questions, such as ‘Do you prefer running, riding a bike or dancing?’. Comparing the data by subitising, counting and reasoning   Mat divided into three categories using images of running, bike riding and dancing. In each category there are items that have been placed there by children. | Answer simple questions of interest by collecting and comparing categorical data using objects, pictures, tallies and numbers to record frequencies  For example:   * Exploring strategies to collect and record data, to answer a question, such as ‘What is the most common material used in playground equipment?’ and recording the frequency of observations   Image of a green mat with headings wood, plastic, fabric and metal. Under each category are red beads in columns. Wood has 2 red beads, plastic has 4 red beads, fabric has one red bead and metal has three red beads. | Choose and answer simple questions of interest by collecting and comparing categorical data. Display data using lists, tables and one-to-one block and picture graphs  For example:   * Answering questions, such as ‘Which month has the most birthdays?’, recording responses and displaying this data on a class graph, recognising the need to use similar sized symbols and spacing them uniformly   Graph titled Our Birthdays Headings along the x axis are J F M A M J J A S O N D Squares in the table indicate data. Number of squares from left to right are 4, 1, 2, 1, 0, 4, 2, 2, 1, 5, 1,3   * Displaying data from observations in a table or list, such as   Table displaying data of observations of birds. Title: Birds spotted in the playground at lunch In the body of the table in top row is a picture of a magpie, labelled Magpie Koolbardi then two tally marks. Second row has an image of a white cockatoo, labelled White Cockatoo Manatj and 5 tally marks. The third row has an image of a parrot, labelled 28 parrot doornart  with three tally marks. |

Years 3–6

Strand: Number and algebra

Sub-strand: Understanding number

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| Year 3 | Year 4 | Year 5 | Year 6 |
| Read, write and order numbers to at least four-digits, including on a number line. Recognise the repetition of the 0–999 sequence of digits  For example:   * Using diagrams to support reading large numbers based on understanding of place value   Diagram representing 2485 in a table. The first cell is labelled as thousands and the second cell is labelled as ones. The 2 in the first cell is labelled as  2 ones (2) thousands. In the next cell the number 485 is labelled with arrows pointing to each digit, 4 is labelled as 4 hundreds (400), 8 labelled as 8 tens (80) and 5 labelled as 5 ones (5)   * Arranging numbers in the hundreds in ascending and descending order * Comparing different hundreds charts, such as 1301–1400 and 1901–2000 to identify patterns * Identifying missing numbers on the markings for a given number line   A horizontal number line with evenly spaced tick increments  beginning at 493 showing numbers 494, 496 and 499. All other tick increments have missing numbers.  5 tick increments after 499 are unlabelled  A horizontal number line with 10 evenly spaced tick increments.  Starting with two missing numbers, the visible numbers are 5652 followed by three missing numbers followed by one missing number followed by 6 and 5659 | Read, write and order numbers to at least six-digits. Recognise the significance of the final digit to determine odd and even numbers  For example:   * Using diagrams to support reading of numbers to at least six-digits, recognising that the sequence of ones, tens and hundreds is repeated in the thousands Number 134876 with its thousands, hundreds, tens and ones labelled.    Within the thousand box containing 134, there are one hundred thousand, 3 ten thousand and 4 one thousand. Within the ones box, there are 8 hundreds, 7 tens and 6 ones. * Arranging numbers in the thousands in ascending and descending order * Identifying that all numbers that end in the digits 0, 2, 4, 6 and 8 are even and that numbers ending in 1, 3, 5, 7 and 9 are odd | Read, write and order seven-digit numbers and beyond  For example:   * Using diagrams to break apart numbers in groups of  three-digits, associate them to the place value (i.e. billions, millions, etc.) and support reading   The number 4612275300 is in a diagram to show place value and that the number is 4 billions, 612 millions, 275 thousands and 300 ones   * Arranging numbers in the millions in ascending and descending order | Investigate the use of positive and negative integers to represent everyday situations. Read, write and order integers on a number line  For example:   * Using the term integers to describe positive and negative whole numbers and zero * Identifying negative integers in familiar contexts, such as temperature, sea levels, bank balances and buildings with underground parking   Building with 8 floors (1 to 8) and 4 underground parking levels (marked minus 1 to minus 4).   * Interpreting the marking of increments on the number line on both sides of the zero mark   A horizontal number line with 7 equally spaced tick increments beginning at negative 3 and ending in positive 3. There is a dot at negative 2 and is labelled "Read as negative two" |
|  | Read and write decimal numbers up to two decimal places  For example:   * Reading decimal numbers correctly, such as as ‘zero point two five’ * Express decimals as both tenths and hundredths, such as is tenths and hundredths or hundredths | Read, write, compare and order decimal numbers, including on a number line  For example:   * Comparing decimal numbers, such as and * Comparing and ordering decimal numbers, such as and positioning them on a number line * Interpreting zero digit(s) at the end of a decimal, such as recognising that has the same value |  |
| Explore different ways to represent and partition numbers up to  four-digits, including groups of 10 (tens), 10 groups of 10 (hundreds) and beyond, using concrete materials and number sentences. Recognise that the value of a digit is determined by its place in a numeral  For example:   * Bundling materials (e.g. pipe cleaners or pop sticks) into groups of 10, 10 groups of 10 to form and 10 groups of to form , connecting bundles to numerals * Using expanded notation to see partitions of a number, including using a calculator, such as * Exploring non-standard partitions, such as   or as 3 hundreds and ones   * Recognising the different place values of 8   Shows the number 2848 with both the 8 digits underlined. The 8 to the left is labelled 8 hundreds (800) and the 8 to the right is labelled 8 ones (8) | Represent numbers up to five-digits using place value and non-standard partitions with equations. Recognise the ‘10 times as many’ place value relationship between adjacent places from right to left  For example:   * Partitioning numbers using place value, such as     and non-standard partitions, such as  or as hundreds and ones   * Recognising the place value relationships      * Identifying how rearranging digits changes the size of a number, such as forming the second largest number by rearranging the digits within | Represent and partition numbers up to seven-digits. Use the multiplicative place value relationship between adjacent places to explain the value of a digit  For example:   * Partitioning numbers using place value, such as   three million four hundred and eight seven thousand six hundred and twenty one equals three million add four hundred thousand add eighty thousand add seven thousand add six hundred add twenty add one  and non-standard partitions, such as  six hundred and five thousand five hundred and twenty two equals five hundred thousand add one hundred thousand add forty five thousand add five hundred and twenty two   * Identifying the place value relationships | Represent and explain the multiplicative place value relationship between places in any number, including decimals  For example:   * Using calculators to explore multiplying and dividing whole numbers and decimals by powers of 10, recording results and noticing patterns   A series of numbers beginning at 0.01, 0.1, 1, 10, 100 Above these numbers are arrows; from 1 to 0.1 labelled divided by 10, from 0.1 to .01 labelled divided by 10. Arrow from 1 to 10 labelled multiplied by 10 and an arrow from 10 to 100 labelled multiplied by 10  A series of numbers beginning at 0.027, 0.27, 2.7, 27, 270 Above these numbers are arrows; from 2.7 to 0.27 labelled divided by 10, from 0.27 to 0.027 labelled divided by 10. Arrow from 2.7 to 27 labelled multiplied by 10 and an arrow from 27 to 270 labelled multiplied by 10 Under the series of numbers is an arrow from 2.7 to 0.027 labelled divided by 100. An arrow from 2.7 to 270 is labelled multiplied by 100   * Explaining the multiplicative place value relationship, such as * is times as many as because is times as many as and is times as many as   + is times smaller than because is times smaller than and is times smaller than |
|  | Represent and explain the relationship between one whole being shared equally among as or and being shared equally among as or using concrete materials  For example:   * Cutting a long strip of paper into equal parts labelled as and repeating the process to demonstrate   A row with ten columns, each labelled 0.1. The last section is subdivided in ten to show 0.01.   * Using a calculator to perform the same process, such as   (recognising that is 10 times smaller than )  (recognising that is times smaller than ) | Represent and partition decimal numbers. Use the multiplicative place value relationship between adjacent places to explain the value of a digit  For example:   * Using place value to partition decimals, such as   and is ones and thousandths   * Comparing the value of digits by determining numbers that are times the original decimal number, such as is times * Exploring multiplying and dividing by , using digital tools and explaining place value relationships, such as |  |
| Represent and explain the relationship between addition and subtraction, using part-part-whole models and number sentences  For example:   * Using part-part-whole models to demonstrate how addition and subtraction are inverse operations   A bar model showing the part-part-whole relationship between 27, 13 and 40. |  |  |  |
| Recall addition and subtraction facts to 20  For example:   * Recalling combinations of two numbers that add up to and related subtraction facts * Using related number facts, such as ,   so and |  |  |  |
| Explore the relationship between multiplication and division, using diagrams, arrays and number sentences  For example:   * Arranging and rearranging a collection of 12 into arrays, exploring the connection between multiplication and division, such as An array of 3 by 4 dots.  Next to the array is text to describe the ways to explore the array showing multiplicative thinking. Text says 3 rows of 4 is 12, 4 columns of 3 is 12, 12 shared into 3 rows 4 and 12 shared into 4 columns is 3. Next to each description is the mathematical number sentence to represent each statement. * Investigating the result of multiplying and dividing by one and multiplying by zero * Relating doubling to multiplication facts for two and four, recognising that doubling is multiplying by two and halving is dividing by two | Represent and explain the relationship between multiplication and division, using arrays and equations  For example:   * Using knowledge of arrays to explain how many rows of seven are needed to make 42   An image to represent a 7 by 6 array with only one row of 7 shown. The rest of the array is represented by a blank box. Under the array are 2 equations with a question mark indicating the unknown value. ? x 7 = 42 and 42 ÷ 7 = ? | Explore, identify and represent factors and multiples of whole numbers in arrays and explain reasoning  For example:   * Using blocks or grids to form different rectangles to list all possible factors for that number, such as can form the following rectangles and * Demonstrating that all multiples can be formed by combining or regrouping, such as multiples of seven can be formed by combining a multiple of two with the corresponding multiple of five   One array 2 by 3 next to another array 5 by 3. Under each array are labels 3x2 and 3x5   * Identifying lowest common multiples and highest common factors of pairs or triples of whole numbers, such as the lowest common multiple of six and nine is 18 and the highest common factor is three and the lowest common multiple of three, four and five is 60 and the highest common factor is one * Creating a sequence of steps based on multiplication and division facts to determine if a number is a multiple or a factor of another number, and representing this in diagrams or flow charts | Explore, identify and represent square, prime and composite numbers in arrays and explain reasoning  For example:   * Using visual representations to explore and reason about square numbers   A table showing multiplication facts from 1x1 to 10x10   * Using tiles, blocks or visual representations to form arrays to explore and explain what makes a number prime or composite * Recognising that a prime number, which has exactly two distinct factors, itself and one, has only one row when represented as an array |
| Recall multiplication facts of 2, 3, 4, 5 and 10, and related division facts  For example:   * Recognise and use the symbols for multiplied by () and divided by () * Using the commutative property of multiplication to extend multiplication facts, such as recognising that if then | Recall multiplication facts up to 1010, and related division facts  For example:   * Using arrays and grid paper to represent and explain patterns in the multiplication and division facts * Using knowledge of doubles and near doubles to establish the multiplication facts, such as using doubles for where          doubles to         doubles to     * Recognising the distributive property of multiplication, such as when finding , knowing that is made up of and , so   and |  |  |
| Recognise, represent and describe unit fractions . Combine unit fractions with the same denominator to create a complete whole  For example:   * Describing fractions using words and numerical representations, such as one-third as one part out of three, or * Exploring fraction walls   A fraction wall showing fractions from one whole to ten tenths   * Representing fractions using shapes, objects, paper folding, fraction strips or number lines   Four images representing fractions. First a hexagon divided into six equal parts with dotted lines intersecting at the centre of the shape. The second image is a triangle labelled one sixth of the hexagon. The third image is a diamond shape with a dotted line dividing the shape into two. This is labelled one third of the hexagon. The fourth image is a trapezium with two dotted diagonal lines dividing the shape into thirds. This shape is labelled half of the hexagon.  A number line beginning at 0 with evenly spaced increments labelled one quarter, one half, three quarters and 1. Above the number line is shading from 0 to 1.   * Finding the quantity of a whole collection, given the number of objects in one-third   Image shows three circles each labelled one third. In the first circle there are four blue dots. In the second two circles are question marks.   * Sharing collections, such as pop sticks or counters, between three, four and five people and connecting division with fractions, such as sharing between three people gives of the collection to each and sharing between five people gives of the collection to each | Explore and represent common equivalent fractions and make connections to their decimal representation  For example:   * Representing a line, shape, object or collection using equivalent fractions   Two rectangles side by side. The first is divided into thirds with the first third shaded.  The second is divided into sixths with the first two sixths (vertically shaded. Under the diagrams is the label one third equals two sixths.   * Demonstrating equivalent fractions as lengths and using paper folding   2 number lines one on top of the other. The first image is a fraction strip split into eighths and shaded up to 4 eighths overlaid on a number line with eighths marked. Second image shows a fraction strip split into quarters shaded up to one-half overlaid on a number line marked with quarters. The two images show that 4 eighths is equivalent to one half   * Building familiarity with common equivalent fractions, such as      * Connecting fractions and decimals by aligning number lines to show equivalence   A fraction strip showing one quarter, two quarters, three quarters and four quarters. Below it, a number line showing 0, 0.25, 0.5, 0.75 and 1, each number is aligned to a fraction to demonstrate that 0.25 = one quarter, 0.5 = two quarters, 0.75 = three quarters and one = four quarters. | Count by unit fractions, locate and represent on number lines and extend to mixed numerals  For example:   * Cutting objects, such as oranges into sixths and counting by sixths to find the total * Counting forwards and backwards by unit fractions * Describing and representing quantities that are more than one whole   A bar of chocolate divided in quarters. Each quarter is labelled with a one quarter fraction. Next to it, there is a second bar also divided in quarters and labelled with improper fractions: one a one quarter, one and two quarters, one and three quarters and one and four quarters, which equals 2 whole bars.   * Moving flexibly between mixed numerals and improper fractions | Order common fractions with the same and related denominators, including mixed numerals, using diagrams and number lines  For example:   * Using a range of representations, such as number lines, paper strips, shapes and objects to assist in ordering common fractions, such as , and   A number line beginning at 0 and ending at one and two sixths. On top of the number line corresponding fractions of one third, two thirds and one and one third are written to match the equivalent fractions. |
|  |  | Identify the use of percentages in everyday situations and recognise that 100% represents a complete whole, which is equal to one  For example:   * Using grid paper to represent a whole   Grid paper showing 10 rows and 10 columns, labelled one whole square equals one whole or 100%. One square is highlighted and labelled 1%.   * Identifying the use of percentages in familiar contexts, such as battery levels on laptops or tablets, sport statistics or supermarket discounts * Recognising percentages that represent more or less than the whole, such as 120% is more than the whole and 75% is less than the whole | Connect commonly used percentages, including 10%, 25% and 50% to fractions and decimals, including on a number line  For example:   * Recognising the percentage symbol (%) is used to show a ratio out of 100 * Contextualising percentages, such as comparing the advantages of being offered a 10%, 25% or 50% discount, in connection to fractions, such as ‘50% off’ is half price * Using representations to identify fractions and the corresponding percentages   A grid showing 5 columns of 4. The first column is shaded blue The remaining squares are white. The diagram is labelled to represent the blue shading, four twentieths, one fifth and 20%   * Using visual aids to explore percentages as parts of a whole, exploring wholes that are different sizes   A rectangle with 25% of it shaded in blue. A much longer rectangle with 25% of it shaded in blue to show that 25% can signify different quantities. |

Sub-strand: Understanding equalities and inequalities

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| Year 3 | Year 4 | Year 5 | Year 6 |
| Explore and use the greater than, less than and equality symbols to compare two whole numbers and statements involving addition and subtraction  For example:   * Recognise and use the symbols for greater than () and less than * Using the correct inequality symbol to compare two given numbers, such as      * Using equality and inequality symbols to compare numbers and statements, such as | Decide if statements of equality and inequality involving the four operations are true, and explain reasoning  For example:   * Classifying statements as true (T) or false (F)   (F)  (T)  (T)  ÷ (F)   * Reasoning to identify, without calculating, that   because multiplying 6 by a larger number will result in a larger answer | Complete and check statements of equality and inequality involving the four operations, and explain reasoning  For example:   * Completing statements, such as      * Checking statements, such as to identify if they are true or false, explaining that doubling one number and halving the other will give the same result * Reasoning to insert the correct symbol to make true statements without calculating, such as | Complete, check and construct statements of equality and inequality involving the four operations, including the use of brackets and order of operations, and explain reasoning  For example:   * Checking statements to say if they are true (T) or false (F), such as   (F)  (T)   * Completing statements, such as     and explaining reasoning using order of operations   * Explaining where to put brackets in a number sentence to make the statement true |

Sub-strand: Patterns and relationships

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| Year 3 | Year 4 | Year 5 | Year 6 |
| Create and represent increasing or decreasing additive patterns from any starting point, using concrete materials and numbers, and describe rules to represent the pattern  For example:   * Using concrete materials to represent an increasing additive pattern, such as   An increasing additive pattern represented by green and red triangles. 5 green triangles followed by 5 green triangles plus 3 red triangles, 8 green triangles plus 3 red triangles and 11 green triangles plus three red triangles.  and describing it as ‘starting at five and adding three more each time’, recognising the importance of the starting point   * Using concrete materials to represent and describe a decreasing additive pattern, such as   A decreasing pattern made from buttons arranged in arrays. Beginning with an array of 4 by 6 then decreasing by subtracting 4 each time. Last pattern sequence is an array of 4 by 3. Each jump is labelled by an arrow indicating a - 4 decrease.   * Creating and describing a variety of number patterns that increase or decrease by a constant amount, such as … or … | Create and represent increasing multiplicative patterns, using concrete materials and numbers, and describe rules to represent the pattern  For example:   * Using concrete materials to represent an increasing multiplicative pattern, such as   An increasing pattern represented by arrays of squares. First array 3 by 2 linked with an arrow labelled multiplied by 2. Second array 3 by 4 linked with an arrow labelled multiplied by 2 to the final 3 by 8 array.  and describing it as ‘starting at six and multiplying by two each time’   * Creating and describing a variety of multiplicative number patterns, such as … or … | Follow rules to create increasing or decreasing additive and multiplicative patterns using concrete materials and numbers. Explore ways to predict unknown values  For example:   * Following a rule, such as ‘start at two, double and add one, double this result and add one and repeat’, drawing or creating the pattern and producing the sequence … * Recognising that the same pattern can be created using different rules, such as   An increasing pattern represented by matchsticks arranged into squares. First part is one square labelled 1 +1 lot of 3. Second is two joined squares labelled 1 + 2 lots of 3.  The third is three joined squares labelled 1 + 3 lots of 3.  An increasing pattern represented by matchsticks arranged into squares. First part is one square labelled 4. Second is two joined squares labelled 4 + 1 lot of 3.  The third is three joined squares labelled 4 + 2 lots of 3.  and predicting that the number of toothpicks needed for eight boxes will be lots of or lots of   * Entering an additive and multiplicative formula,   = (A1\*3 – 5) into a spreadsheet and following the rule to generate a sequence of numbers, starting from , to determine the th term   * Predicting if the next number in a pattern will be odd or even | Create and represent increasing or decreasing patterns using concrete materials and numbers. Use words to generalise rules that relate each element of a pattern to its position  For example:   * Using toothpicks, counters, blocks or drawings to create patterns, investigate and make predictions, such as   A pattern of square shapes beginning with one square, then three squares arranged in an L shape then 6 squares  then 10 squares.  the number of squares in the sixth diagram will be   * Recognising that one pattern can generate many rules, such as   ~~A pattern of squares that increases from left to right. First square consists of 9  squares with the middle one coloured black. Second square consists of 16 squares with the middle four coloured black. The final part of the pattern consists of 25 squares with the middle 9 squares coloured black.~~  a square with side length of will have black squares,  or  white squares and  squares all together   * Considering sequences, such as recognising the rule as being double the position number, subtract one and using the rule to predict the th odd number |

Sub-strand: Calculating with number

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| Year 3 | Year 4 | Year 5 | Year 6 |
| Add and subtract two- and three‑digit numbers, using a range of strategies  For example:   * Using and applying a range of strategies, such as partitioning, rearranging, number lines, bar models and part-part-whole models * Rearranging and partitioning to facilitate calculations   (subtract from and add to )  (using place value partitioning)   * Solving subtraction problems efficiently by adding or subtracting a constant amount to both numbers, such as   adding to both numbers to make   * Using a number line, such as for   A number line showing how the jump strategy may be used. Details in text above image.   * Using a part-part-whole model, such as for   and using the inverse relationship  A bar model showing a part-part-whole relationship. Details in text above image. | Add and subtract whole numbers up to four-digits, using flexible and efficient strategies  For example:   * Using and applying a range of strategies, such as      * Setting out standard and  non-standard partitions to facilitate addition and subtraction   Diagram showing partitioning to add 527 + 83. 520 is added to 80 then 7 is added to 3 resulting in 610. Second diagram shows partitioning to subtract 27 from 53. Subtracting 20 from 40 then 7 from 13 resulting in 26   * Using algorithms, showing understanding to record addition and subtraction calculations   A vertical algorithm showing addition of 286 + 437.  Working of adding each place is shown and the final amount is shown.   * Recognising how hundreds are exchanged in subtraction algorithms requiring re-grouping   A vertical algorithm showing subtraction of 428 - 43 showing total 485. Working out showing how hundreds are exchanged shows 500 crossed out to show 400 and 100 added to 20 and 8.  Under this is 40 + 3   * Recognising when mental strategies would be more efficient than a vertical algorithm for subtraction, such as or * Using the inverse relationship between addition and subtraction to find missing numbers in calculations, such as   Algorithms showing missing values. Empty square - 15 = 19 83 = 55 + empty square 18 + 5 = empty square + 16 | Add and subtract any whole numbers, using flexible and efficient strategies  For example:   * Applying known strategies,  such as      * Using algorithms, to record addition and subtraction calculations      * Identifying efficient and inefficient multidigit subtraction strategies, such as solving mentally is efficient, using an algorithm is inefficient | Choose and use flexible and efficient strategies to calculate with whole numbers, involving any of the four operations and explore the use of the order of operations  For example:   * Selecting and using efficient strategies to multiply whole numbers, such as   mentally but  using a calculator   * Applying the order of operations to solve equations, such as      * Representing remainders appropriately, as whole numbers, fractions or decimals |
|  |  | Add and subtract fractions with the same denominator, using flexible and efficient strategies  For example:   * Using concrete materials or diagrams   paper strips divided into fifths with the first fifth shaded differently to the next two fifths and the last two fifths left white. This is labelled one fifth + two fifths = three fifths separated by OR with next diagram showing two strips each divided into fifths. The first strip has 4 fifths shaded dark grey and the last fifth shaded lighter next to this is a strip divided into fifths with the first two fifths shaded light grey. Label reads 4 fifths plus 3 fifths = 7 fifths = 1 and two fifths.   * Using diagrams, objects and mental strategies to subtract a unit fraction from any whole number, including one   1 subtract one third shown on a rectangle cut into thirds. 1 third is shaded. Detail in text above. | Add and subtract fractions with related denominators, using flexible and efficient strategies, based on knowledge of equivalence  For example:   * Representing fractional quantities with the same or related denominators to add and subtract fractions, such as ‘How much more is than   2 fraction strips showing that six eigths is equivalent to three quarters. Details in text above diagram.   * Calculating mentally, or with jottings and diagrams recognising that , so      * Adding fractions by simplifying or grouping, such as      * Using a number line, such as for – 1   A vertical number line starting at 0 and labelled 3 sixths 1 1 and 3 sixths 2, 2 and 3 sixths and 3.  Unlabelled increment ticks are included. Above the number line is arrow starting at 2 and 5 sixths, jumping to 1 and 5 sixths. This section of the arrow is labelled -1. The arrow jumps back by one sixth and is labelled - one sixth. |
|  |  |  | Add and subtract decimals to two decimal places, using flexible and efficient strategies  For example:   * Multiplying decimals by powers of to solve * Using place value, such as     and   * Applying known strategies, such as levelling or constant difference   A black text on a white background  Description automatically generated |
|  | Multiply two-digit numbers by one‑and two-digit numbers, and divide whole numbers by one-digit numbers, where there is no remainder, using flexible and efficient strategies  For example:   * Applying the associative property of multiplication, where becomes   so that   * Using a variety of formats to partition numbers into ones and 10s and represent operations in arrays to support calculations, such as   Grid paper showing additive partitions of 6 times 17 partitioned in 6 times 10 and 6 times 7.  or  An area model to show the additive partition of 14 times 16 as 10 times 10 = 100, 10 times 6 = 60, four times ten = 40 and 4 times 6 = 24, all totals to be added together for the result of 224.   * Doubling for multiplying by four and eight, such as   doubles to  doubles to  and halving for dividing by four and eight, such as  halves to  halves to     * Doubling and halving to make multiplication easier, such as is the same as      * Using materials or diagrams to develop and explain division strategies, such as finding thirds or using the inverse relationship to turn division into a multiplication | Multiply larger whole numbers by one- and two-digit numbers and divide whole numbers by one-digit numbers, including those with remainders, using flexible and efficient strategies  For example:   * Utilising factors to multiply, such as can be re-written as which is * Using compensation to make division easier by multiplying or dividing by the same amount, such as is * Partitioning numbers to simplify multiplication, such as   Illustration of partitioning the multiplication of 43 times 57 as 40 times 50, 40 times 7, 5 times 50 and 3 times 7.   * Using multiplication facts to facilitate division, such as  ,   and  therefore, the result must be between and , with a remainder () | Multiply decimals by whole numbers and multiply and divide decimals by powers of 10, using flexible and efficient strategies  For example:   * Exploring multiplying whole numbers by decimals larger and smaller than one to identify misconceptions that multiplying always makes numbers bigger, such as and * Using mental strategies to multiply decimals, such as * Using place value to mentally multiply and divide decimals by powers of 10, such as |
|  |  |  | Determine a familiar fraction, decimal or percentage of a whole number  For example:   * Calculating fractions of whole numbers, such as   A number line labelled 0 to 1 with sixths indicated on the number line with 6 brown sections.  Two of these sections are shaded.  Above the brown shaded section is a line labelled 30 that is the same length as the brown shaded section. Below the number line are the labels one fifth and 2 fifths.   * Explaining how of a quantity can be achieved by dividing by three, and how knowledge of of a quantity can be used to find or of the same quantity * Finding of a whole number, recognising that so finding of a number means dividing by five * Finding 10%, 25% and 50% of a whole number, equating 10% to dividing by 10, 50% to finding half by dividing by two and 25% to finding a quarter by dividing by four or by finding half and half again |
| Explore additive estimation strategies to evaluate the reasonableness of a calculation in familiar contexts  For example:   * Identifying situations where estimating is useful because a high level of accuracy is not necessary * Estimating by rounding numbers to the nearest ten or hundred, such as rounding to * Estimating the results of a calculation to check the reasonableness of calculator results | Explore a range of additive estimation strategies for different situations, including using knowledge of odd and even numbers  For example:   * Using front-end estimation where a high level of accuracy is not required, such as estimating   as   * Rounding to the nearest dollar to estimate cost,   rounds to     * Over and underestimating for a range, such as , the result will be between   and     * Checking results of calculations using knowledge of odd and even numbers, such as the sum of two even numbers or two odd numbers must be even | Explore multiplicative estimation strategies and their appropriateness in different situations  For example:   * Recognising the effect of rounding both numbers up, both numbers down or one number up and one number down, explaining which estimation is the best approximation and why * Estimating how many pages in a book series if there are five books in the series and each book in a series has about pages, using doubling and halving, pages * Estimating if will be enough to buy six mugs at each by rounding to | Use estimation and rounding to make reasonable evaluations and justify results  For example:   * Using rounding to simplify divisions, such as approximating to , gives a result of approximately * Estimating fractions, such as is a little less than a half * Rounding a decimal to a nearby whole number, such as for , recognising it will be between and , which is between and * Rounding up when determining money required for a purchase, and not rounding for digital financial transactions |

Sub-strand: Financial mathematics

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| Year 3 | Year 4 | Year 5 | Year 6 |
| Investigate financial transactions, recognising equivalent values and change  For example:   * Identifying different payment methods and situations where they are commonly used, such as cards for public transport and gold coins for donations * Developing an awareness of the value of money relative to everyday items, using catalogues * Representing equivalent values using different denominations, such as 70 cents can be made up of three 20-cent coins and a 10‑cent coin, or two 20-cent coins and three 10-cent coins * Representing transactions involving change, such as determining the change from a note to purchase a shirt and socks for a sport team uniform | Explore saving and spending, recognising that limited amounts of money are available  For example:   * Investigating saving patterns using different weekly amounts and various time periods, such as 4, 8 or 12 weeks * Comparing how total savings can change when weekly savings amounts differ, such as ‘If is saved each week for eight weeks, how much do you save? What if you save a week for the same time?’ * Exploring purchasing choices when money is saved rather than spent immediately, recognising that spending decisions can be influenced by external factors, such as friends, media and advertising | Identify features of budgets and create a simple budget, comparing prices where possible  For example:   * Using a context, such as a school trip or class party to create a simple budget * Distinguishing between total cost and cost per person * Comparing prices and recognising that a product/service can be overpriced * Developing an awareness that advertising can influence purchasing decisions | Create a plan for a savings goal, predict expenses and identify that saving money with a bank attracts interest  For example:   * Choosing a savings’ goal, such as an end-of-year school camp * Using a spreadsheet to keep track of money being raised in a bake sale for the end-of-year school camp. Keeping track of income (money received for the cakes purchased) and expenses (money spent on ingredients), recognising the need to prioritise certain expenses (e.g. ingredients over decorations) * Identifying the importance of checking receipts, including ensuring any % discounts have been accurately applied and using estimation strategies to check the total amount * Discussing the benefits of using a bank for saving |

Sub-strand: Modelling with number

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| Year 3 | Year 4 | Year 5 | Year 6 |
| Identify and represent a range of real-world addition and subtraction situations with part-part-whole models, and multiplication and division situations with arrays. Write number sentences to reach a solution and interpret in context  For example:   * Modelling additive situations, such as ‘I had tomatoes and then picked some more, now I have . How many did I pick?’ Choosing to use a part‑part‑whole model and writing number sentences, explaining how each number is related to the situation. Using strategies, such as the relationship between addition and subtraction to solve, interpreting the answer and the additional tomatoes picked   A part-part whole diagram showing the whole as 138. One part is labelled 75 and the second part is labelled with an ?   * Modelling multiplicative situations, such as sharing horses into or paddocks using arrays, choosing to use multiplication and/or division, writing number sentences,   (e.g. ) and explaining how each number is connected to the situation (e.g. is the number of paddocks, is the total number of horses and the missing number will be the number of horses in each of the two paddocks) | Identify and represent real-world additive and multiplicative situations with diagrams and equations to reach a solution. Interpret and communicate findings in context  For example:   * Modelling situations, such as buying five scooters for each, evaluating the situation, identifying that it is multiplicative. Representing the situation using a bar model and equation, explaining that five is the number of scooters and is the cost of each scooter. Using efficient strategies to solve, such as rounding to , multiplying and subtracting , communicating that the answer is the total cost of buying five scooters   A bar model with the whole labelled $? Under this are five equal part sections labelled $96. Under the bar model is the equation 5 x $96 = ? | Identify and represent a range of real-world additive and multiplicative situations with equations, using diagrams where needed. Interpret and communicate findings in context  For example:   * Modelling situations, such as determining how many containers Amy collected for ‘Containers for Change’, knowing their total was times as many as Ling, who collected . Determining the situation to be multiplicative and represent using a diagram and equation, demonstrating how the representation is connected to the situation, such as the diagram shows that is times as many as . Using efficient strategies to solve, such as halving and doubling , communicating that the answer is the number of containers Amy collected, which is times as many as Ling | In real-world situations involving whole numbers, order of operations and fractions with the same denominator   1. analyse the situation and identify relevant information 2. mathematically represent the situation, including using equations to reach a solution 3. interpret and communicate findings in the context, exploring and justifying decisions   For example:   * Modelling situations, such as determining the total cost of Leith hiring a bike for nine hours,   Image is a flyer for bike hire. Bike Hire 4 hours for $15! $3 for each additional hour Additional items (daily cost): Helmet $2 Basket $5 A helmet must be hired by law Late returns incur a penalty of $3 per 15 minutes  analysing the given information, identifying the relevant information to translate the situation into an equation. Deciding on the operation or combination of operations and applying the order of operations,  e.g. Using efficient strategies to solve, interpreting the answer to be the total cost, explaining findings, such as ‘It would have cost to hire the bike for four hours, and it was an extra for fivemore hours’ |

Strand: Measurement and geometry

Sub-strand: Two-dimensional space and structures

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| Year 3 | Year 4 | Year 5 | Year 6 |
| Explore one-step slides (translations) and flips (reflections) of familiar two-dimensional shapes, make connections to line symmetry and describe the movement of the shape  For example:   * Sliding or flipping 2D shapes to identify that translations and reflections do not change the size or features * Identifying lines of symmetry on given shapes, such as triangles and squares, using  paper-folding, mirrors or drawings   Symmetry for rhombus (none), equilateral triangle and square. Details in text above image. | Explore, visualise, describe and create two-dimensional shapes that result from combining or splitting familiar shapes  For example:   * Combining familiar 2D shapes, including quadrilaterals and other polygons to form common shapes   Square made from one large black triangle and two smaller grey triangles. A triangle made up of one black larger right-angled triangle and two smaller grey right-angled triangle. A rectangle made up of one central black triangle and two grey right-angled triangles.   * Splitting a given shape, such as a hexagon, into two or more common shapes   4 hexagons formed using different shapes. Details in text above diagram. | Explore line and rotational symmetry in two-dimensional shapes  For example:   * Identifying line symmetry in the environment, artworks and patterns, such as the following Islamic design that has four lines of symmetry   An Islamic design showing one square superimposed on a base square, top square is rotated 90 degrees. On top of the blue squares are red lines of symmetry.   * Identifying the rotational symmetry of shapes by tracing and rotating them to determine how many times they match their original position in a full rotation, such as a rectangle aligns with itself twice during one complete turn | Explore, visualise and describe translations, reflections or rotations of two-dimensional shapes  For example:   * Recognising that translations, reflections or rotations change the position and orientation but not the size of shapes * Transforming shapes to create tessellating patterns, including using digital tools. Describing the transformations used and discussing why these shapes tessellate, including identifying shapes or combinations of shapes that will not tessellate |
| Estimate, measure and order lengths in uniform units, including millimetres, centimetres and metres  For example:   * Creating a metric unit measuring tape by drawing 1 cm markings on a long paper strip using a centimetre cube or tile and using it to estimate, measure and order the length of stationery items * Recognising the need for formal units smaller and larger than the centimetre to measure length and using the abbreviations mm, cm, m and km * Investigating the length of one metre using everyday examples, such as a desk or arm span and exploring benchmarks for centimetres and millimetres | Estimate, measure and compare the perimeter of two-dimensional shapes, using scaled instruments and appropriate informal or formal units  For example:   * Recognising that perimeter is the sum of the lengths that form the boundary of a shape or enclosed space * Selecting and using appropriate scaled instruments, such as a tape measure, ruler or trundle wheel to measure around the boundary of a shape, e.g. a painting or a garden bed * Using a piece of string to measure the perimeter of irregular shapes, including those that have curved sides | Choose and use appropriate metric units and part units to estimate and measure lengths  For example:   * Choosing and using an appropriate unit, such as centimetres when measuring a length of fabric * Recognising that the choice of an appropriate unit may depend upon the need for accuracy rather than simply the size of the object, for instance a bridge may be measured in metres to estimate length, but in millimetres for engineering work * Recording measurements using both whole units and whole and part units, such as 56 millimetres or 5.6 centimetres | Convert between units of length, by connecting metric units to the decimal system and extend to units of mass and capacity  For example:   * Recognising the significance of the prefixes in units of measurement * Converting between units, including millimetres, centimetres, metres, kilometres; milligrams, grams, kilograms, tonnes; millilitres, litres, kilolitres and megalitres * Using place value, such as converting 2600 m to 2.6 km, recognising that 1000 m equals 1 km * Explaining and using the relationship between the size of a unit and the number of units needed, such as more grams than kilograms will be needed to measure the same object, and so to convert from kilograms to grams you need to multiply by 1000 |
|  |  | Describe and test a sequence of steps to determine the perimeter of rectangles  For example:   * Creating a range of rectangles representing paddocks on grid paper and establishing different methods of working out the length of boundary fences * Exploring efficient ways to calculate the perimeters of rectangles, such as adding the length and width together and doubling the result |  |
| Compare the areas of two shapes indirectly, using uniform informal units, without gaps and overlaps  For example:   * Selecting from a range of uniform informal units, such as tiles, counters or blocks to cover shapes * Using uniform informal units to compare areas, recognising why the same unit is used repeatedly * Recognising the relationship between the size of the informal units used and the number of units needed to fill a shape, choosing units that can best cover a shape with no gaps or overlaps | Estimate, measure and compare the areas of rectangles, using uniform informal square units in arrays  For example:   * Choosing from a range of uniform informal square units, such as tiles, blocks, post it notes or paper cut outs, tracing around this unit, creating an array to estimate, measure and compare the area of rectangles   A rectangle filled with squares drawn using a square template. One square is coloured orange with a pencil near it to represent the template. | Identify dimensions of a metric square unit. Estimate, measure and compare areas using metric square units  For example:   * Recognising the dimensions of a metric square unit, recording the area using the abbreviations mm2, cm2 and m2 and using correct terminology, for instance, 2 cm2 read as ‘two square centimetres’   One square centimetre square labelled with the dimensions 1cm by 1cm and the area.  One larger square labelled with the dimensions 1m by 1 m and the area 1 square metre.   * Recognising that a unit of area can be cut and rearranged and still be the same area, such as a square metre does not need to be ‘square’, it may be 50 cm by 2 metres or 25 cm by 4 metres * Exploring the use of arrays within irregular shapes to approximate the area, discussing the parts that fall outside of the arrays   An irregular shape drawn on grid paper in black. Inside this shape are two rectangles drawn in blue to almost fill the irregular shape. | Describe and test a sequence of steps to determine the area of rectangles based on dimensions  For example:   * Drawing a variety of rectangles on grid paper to investigate patterns in the relationship between the length of the base and the height of rectangles, and their area   A table representing the relationship between base, height and area. Headings are Base Height and Area  Body of table 5cm, 4cm, 20cm squared on the first line and 3cm, 6cm and 18 cm squared on  the second line.   * Using grid paper to investigate and compare shapes that have the same perimeter but different areas, such as both rectangles have a perimeter of 14 cm but different areas   Two rectangles drawn on grid paper. First shows two columns of 5. The second shows one row of 6. |
| Identify angles as measures of turn between two lines that intersect and directly compare angle sizes in everyday situations  For example:   * Identifying angles formed by two arms that open and close in everyday situations, such as the arms of a clock, a partially opened book, or an open pair of scissors, recognising that a full arm turn forms a circle * Superimposing two angles, aligning one arm and the vertex, and checking the other arm to determine which angle is greater | Indirectly compare angles and identify as being equal to, greater than or less than a right angle  For example:   * Identifying angles in the environment and comparing to a right angle, including by using an informal tool where required, such as a pipe cleaner or bent straw * Recognising that the length of the arms does not affect the size of the angle   Open blades of scissors showing less than a right angle, the corner of a book is equal to a right angle and a wide open door is greater than a right angle. | Estimate, measure and construct angles in degrees using a protractor. Classify acute, right, obtuse, reflex and straight angles  For example:   * Estimating and describing the size of angles using known angles as benchmarks * Exploring the scale on a protractor, recognising that protractors usually have two sets of numbers, one for measuring angles in a counterclockwise direction and one for clockwise * Developing and following a sequence of steps to accurately measure angles using a protractor * Recording angle measurements using the symbol for degrees () | Investigate angles in a right angle, on a straight line, angles at a point and vertically opposite angles, to determine unknown angles and explain reasoning  For example:   * Investigating adjacent angles that form a right angle and establish that they add to (complementary angles)   Three intersecting lines with yellow highlights the complementary angles. Detail in text above.   * Investigating adjacent angles that form a straight angle and establish that they add to , such as an angle of and (supplementary angles)   Three intersecting lines showing adjacent angles of 120 and 60 degrees. Detail in text above.   * Recognising vertically opposite angles as angles that are directly opposite each other and equal in size, formed when two lines intersect   Two intersecting lines showing vertically opposite angles, labelled with curved lines. Detail in text above.   * Recognising and describing angle relationships embedded in diagrams, such as   Tessellating pattern of cubes. A blue semi circle is drawn over intersecting lines to indicate adjacent angles.A tessellating pattern with blue lines and a circle to indicate various angles within the pattern. |
| Create and interpret simple maps to show positions and pathways, considering the relative position of key features  For example:   * Imagining a ‘bird’s-eye-view’ of locations to create maps without scales, such as representing the layout of a classroom or bedroom * Sketching a mud map of the school, identifying the main buildings, orienting to the real world to determine directions to travel | Create or interpret a grid map, describe positions and pathways, and explore scale and legends  For example:   * Locating positions on grid maps by co-ordinating horizontal and vertical references * Exploring scales, such as the length of one square grid metres * Using maps to move through pathways, describing a journey between two locations on a grid map * Using digital tools to create a grid map of a familiar area, such as the local park | Use directional language, grid references and grid coordinates to describe positions and pathways  For example:   * Using a given grid map and compass directions (N, S, E, W) plan, describe and show a route from one location to another * Recognising the difference between grid references and grid coordinates   A grid reference identifies a region by labelling the spaces, e.g. B2 shows a region (square)   A grid coordinate uses numbers to identify a point where two numbered lines intersect, e.g. (1, 3)   Because grid coordinate uses numbers, it can identify any point within the spaces by using decimals, e.g. 1.25, 2.5   * Identifying grid coordinates on the number plane in the first quadrant, describing the horizontal position first, followed by the vertical position. Recognising () is a different location to ()   The points (2,3) and (3,2) plotted on Cartesian plane in the first quadrant. Detail in text above. | Explore the Cartesian plane as the intersection of two number lines at zero, using the coordinate system to locate points in all four quadrants  For example:   * Recognising positive and negative integers on the number lines when plotting points in all four quadrants on the Cartesian plane   Cartesian plane showing number lines ranging from -5 to 5 on both Y and X axis. The following points are plotted: H (3, 1); G (2, -4), J (-2, -1), I (-1, 4) |

Sub-strand: Three-dimensional space and structures

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| Year 3 | Year 4 | Year 5 | Year 6 |
| Visualise and make models of three‑dimensional objects. Compare and classify objects according to the key features of faces, edges and vertices  For example:   * Visualising and constructing models of 3D objects using clay, sticks, card or digital tools * Comparing 3D objects, identifying similarities and differences, such as a pyramid has triangular faces and a cube does not * Classifying a collection of 3D objects, including cubes, cylinders, cones, spheres, rectangular and triangular prisms and pyramids using geometric language to describe features | Connect three-dimensional objects to their two-dimensional representations and visualise and describe key features that cannot be seen  For example:   * Connecting images or drawings to 3D objects, including prisms, pyramids and cylinders from images * Constructing models of 3D objects, based on 2D sketches, using cubes   Isometric grid drawing of four cubes. Details in text above diagram.   * Visualising features of 3D objects that cannot be seen, such as recognising the sketch is a square-based pyramid with a square base, four triangular faces, eight edges and five vertices   A sketch of a pyramid showing only two triangular faces. | Visualise and connect three‑dimensional objects to their nets and build objects from their nets  For example:   * Deconstructing packages to see the nets of different 3D objects, including prisms, pyramids and cylinders * Investigating the variety of nets that can be used to create a particular prism   3 types of nets that can be used to make a cube. Details in text above diagram.   * Examining a diagram to determine whether it is the net of a 3D object or not * Constructing 3D objects from both provided nets, and by sketching and testing nets, considering the number, shape and placement of faces | Visualise, sketch and construct three-dimensional objects, including prisms and pyramids  For example:   * Visualising features to create sketches of 3D objects, showing depth and from different views * Constructing 3D models of prisms and pyramids, given drawings of different views * Creating skeletal 3D models of prisms and pyramids using materials, such as toothpicks, clay, straws and tape |
| Measure and order capacity in uniform units, including millilitres. Estimate larger capacities using a litre container  For example:   * Creating a calibrated measuring instrument by repeatedly pouring a quantity of water, such as 50 mL and drawing and labelling a line at each level * Recognising that one litre containers can be a variety of shapes, such as milk cartons and ice-cream containers | Estimate, measure and compare capacity in litres and millilitres using scaled instruments  For example:   * Relating benchmark capacities to everyday containers, such as a 250 mL juice container or a 600 mL water bottle * Recording capacities using the abbreviation for litres (L) and millilitres (mL) * Comparing capacity measurements, such as recognising that a 1500 mL container holds more than a 1 L container | Choose appropriate units to estimate and measure capacity  For example:   * Selecting and using appropriate units, such as millilitres for a drinking glass and litres for a bucket * Reading calibrated measuring instruments with evenly spaced markings where not all values are labelled, such as markings for 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, but only 1 and 2 are labelled * Recognising and interpreting decimal notation for capacities, such as 8.7 L is the same as 8 litres and 700 millilitres |  |
|  | Explore and directly compare volumes, and recognise that objects with different shapes can have the same volume  For example:   * Identifying volume as the space an object occupies and differentiating it from other measurement attributes * Recognising that objects made with the same number of cubes may have different volumes depending on the size of the cubes used * Creating different objects using the same amount of playdough, observing that they all have the same volume even though they are shaped differently | Identify the dimensions of a metric cubic unit. Construct and compare rectangular prisms using cubes and determine their volume  For example:   * Constructing and comparing rectangular prisms using cubic‑centimetre blocks and describing the volumes in terms of layers, such as two layers of 10 cubic-centimetre blocks   A rectangular prism made from cubic-centimetre blocks. Image shows 3 faces of the prism.  Detail in text above.   * Recording volumes using the abbreviation for cubic‑centimetres (cm3) and cubic-metres (m3) * Exploring different rectangular prisms that can be made from the same number of cubes   Two rectangular prisms made from 6 cubes. First one is 2 rows of 3 and the second is one column of 6. | Describe and test a sequence of steps to determine the volume of rectangular prisms based on dimensions  For example:   * Exploring and generalising multiplicative strategies to find volume using diagrams, numbers and words, focusing on the relationship between the number of cubes in a layer and the number of layers in the prism, such as recognising that one layer is 12 cm3 and multiplying by the number of layers to determine volume   Image showing two different layers of the same rectangular prism made from cubes. First image shows one layer of 4 x  3 x 1.  Second layer shows 3 of these layers and is labelled 4 x 3 x 3. Detail in text above. |

Sub-strand: Non-spatial measurement

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| Year 3 | Year 4 | Year 5 | Year 6 |
| Compare objects to common benchmarks, including 100 g, 250 g, half and one kilogram  For example:   * Using balance scales to compare the weight of everyday items to common benchmark weights * Identifying familiar items that weigh about one kilogram, such as a pack of flour or litre of milk * Identifying familiar items that are measured in grams, such as chocolate or spices | Estimate and measure mass in kilograms and grams using analogue and digital scales  For example:   * Interpreting evenly spaced markings on analogue scales where not all values are labelled * Estimating and weighing the same item using both analogue and digital scales and comparing the readings * Creating a calibrated scale, and using it to measure the mass of everyday items in grams and kilograms   Image of a student created calibrated scale. Shows a bag containing 4 items hanging from a scale. The board behind shows a red arrow pointing to calibrated lines marked 1 to 4.   * Recording masses using the abbreviations for grams (g) and kilograms (kg) | Choose appropriate units to estimate, measure and compare mass  For example:   * Identifying the appropriate unit and device to measure mass, such as digital scales to measure a school bag (kg) and kitchen scales to measure the weight of ingredients (g) * Comparing readings on digital scales applying knowledge of decimal numbers, such as recognising that 3.25 kg is heavier than 3.025 kg * Recognising the equivalence of whole number and decimal representations of measurements of mass, such as 3 kg 250 g is the same as 3.25 kg |  |
| Tell the time in minutes using analogue and digital clocks. Describe duration in hours, minutes and seconds and identify the relationship between them  For example:   * Recognising that the space before the minute hand (in a clockwise direction) indicates the minutes elapsed since the hour past, and that the remaining space on the clock shows how many minutes until the next hour * Developing a sense of how long one second and one minute is, using a timer to determine the duration of simple tasks * Using time to describe the duration of events, such as the 3 second rule in netball, recess is about 20 minutes, and a school day is about 6 hours | Convert between units of time, tell the time on digital and analogue clocks using ‘am’ and ‘pm’ notation and determine duration  For example:   * Using the multiplicative relationship between hours, minute and seconds to convert between units, such as recognising that an hour is 60 times longer than a minute * Comparing the duration of two familiar events with durations provided in different time units, such as a movie length of 95 minutes and a bus journey of 2 hours and 10 minutes * Relating analogue notation to digital notation for time, such as 20 to 9 in the morning is the same time as 8.40 am | Explore, describe and convert between 12- and 24-hour time systems and use to determine duration  For example:   * Using visual aids to make connections between 12- and 24-hour time systems   A clock marked with 12 and 24 hours representing the time 10:09 or 9 past 10. Detail in text above.   * Applying strategies to convert between time systems, understanding that the same time can be described in different ways, such as to convert times from 12.00 pm to 11.59 pm into 24-hour time, 12 is added to the hour      * Determining duration of events when the starting and finishing times are provided in different systems, such as the duration of a school excursion scheduled to start at 9.30 am and conclude at 1445 | Use timetables and itineraries in  12- and 24-hour time systems to determine the duration of events and journeys  For example:   * Applying concrete and mental strategies to determine elapsed time, considering starting and finishing time   A number line marked with times in 24 hour format, 1245, 1300, 1500 and 1520.  Above the line indicated by arrows are jumps labelled 15 minutes, 2 hours and 20 minutes. Under the number line is a label 'Elapsed time is 2 hours and 35 minutes'.   * Interpreting a variety of timetables and itineraries, from real-life situations, such as a school, movie theatre or public transport authorities |

Sub-strand: Modelling with measurement and geometry

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| Year 3 | Year 4 | Year 5 | Year 6 |
|  | In real-world situations involving two-dimensional shapes, three‑dimensional objects, grid maps, determining length, capacity or mass in metric units or converting between units of time, mathematically represent the problem to reach a solution. Interpret and communicate findings in the context of the situation  For example:   * Modelling situations involving time, such as determining the winner of a summer reading contest where some students have entered their data in minutes and some in hours. Representing the problem using a diagram, such as a table explaining how information in the table relates to the context. Using efficient strategies to convert between the units of time to determine a winner, interpreting the winner to be the student with the longest duration of reading time * Modelling situations involving units of measurement, such as exploring how much water is needed to fill a bathtub and comparing to how much water is used during a five-minute shower | In real-world situations involving transformation of two-dimensional shapes, nets, grid reference systems, determining length, area, capacity, volume or mass in metric units or converting between 12- and 24-hour time, mathematically represent the problem to reach a solution. Interpret and communicate findings in the context of the situation  For example:   * Modelling situations involving metric units, such as planning items to pack for a school camp, given a list of required items and a weight and size limit for student bags. Representing the problem with diagrams and equations, determining the weights of given items, using estimation strategies where appropriate and determining the total weight. Interpreting the findings, such as the weight could be reduced if a plastic water bottle is chosen rather than a metal one * Modelling situations, such as * Considering if the classroom can fit a new table by creating a grid map of the current configuration of the classroom, to an approximate scale. Using translations and grid references to analyse and solve the problem * Creating a pathway utilising a map of a local community ensuring all points of interest are explored and identifying the total distance covered | In real-world situations involving transformation of two-dimensional shapes, rectangular prisms, pyramids, Cartesian plane, measuring and converting metric units for length, mass and capacity, determining volume and area in metric units or determining the duration of events and journeys   1. analyse the situation and identify relevant information 2. mathematically represent the situation to reach a solution 3. interpret and communicate findings in the context, exploring and justifying decisions   For example:   * Planning a class trip to the WA Museum Boola Bardip (WAMBB), utilising Transperth timetables and the Map of WAMBB to plan the route and schedule for the day * Designing a monument to honour an important person with the design, including both prisms and pyramids. Investigating how the symbolic meaning of the objects could reflect the qualities of the person |

Strand: Probability and statistics

Sub-strand: Probability

|  |  |  |  |
| --- | --- | --- | --- |
| Year 3 | Year 4 | Year 5 | Year 6 |
| Describe familiar events using the language of chance. Identify and list possible outcomes of everyday chance events  For example:   * Describing events as being likely, unlikely, 50-50, possible, certain or impossible, such as   Christmas is happening in December (certain)  Getting heads when you flip a coin (50-50)  Snow in Australia in Summer (possible but unlikely) Having pizza for dinner tonight (possible) Seeing a dog on the way home from school (likely) Finding a unicorn in the backyard (impossible)   * Identifying all possible outcomes for events, such as choosing two pegs from a bag containing three red and three blue pegs | Order the likelihood of everyday chance events. Identify when events are not affected by previous events  For example:   * Using lists of familiar events and ordering them from ‘least likely’ to ‘most likely’ to occur, such as seeing a rainbow during recess, finding a pencil in your school bag, having lunch at school on a regular day or winning a national raffle and discussing why the order of some events might be different for different students * Identifying that obtaining heads when tossing a coin does not affect the chance of obtaining heads on the next toss * Clarifying misconceptions about events that are not affected by previous events, such as if it rains today, it is more likely to rain tomorrow | Compare a range of everyday chance events, grouping into those with outcomes that are equally likely or not equally likely  For example:   * Comparing differently divided spinners and identifying if they will produce equally or unequally likely outcomes for each section   Two spinners. Left side spinner has unequal sections labelled red, yellow, green and blue. Right spinner has equal sections labelled red, yellow, green and blue.  Two spinners. The left one is divided unequally with a curved line. Smaller section is labelled win and larger section lose.  The right one is divided into unequal sections with straight lines. The sections are labelled 10, 1, 1 and 5.   * Comparing jars filled with two colours of balls and identifying those with equally likely outcomes and with unequally likely outcomes for each colour   Four jars filled with different amounts of blue and white balls. The first has 5 white balls and 5 blue balls, the second with 5 white balls and two blue balls, the third with 3 white balls and six blue balls and the last with 4 white balls and 4 blue balls. | Order everyday chance events and phrases on a scale from 0 to 1, where 0 represents an event that is certain not to happen (impossible) and 1 represents an event that is certain to happen  For example:   * Recognising that all measures of probability fall between 0 and 1 and a probability of 100% means the event is certain to happen * Positioning events and phrases on a scale and justifying placements |
| Recognise the likelihood of outcomes for planned, equally likely, repeated chance experiments. Conduct the experiments and recognise variation in the results  For example:   * Rolling a dice, tossing a coin or choosing a card for a set number of trials and discussing the likelihood of outcomes using the language of chance * Conducting experiments and recording results using tallies, pictures or objects * Comparing results with others and with expected outcomes, discussing how results vary | Predict the likelihood of outcomes of unequally likely, repeated chance experiments. Conduct the experiments, describe variation and compare to the prediction  For example:   * Naming blue as the colour most likely and red as the least likely to be drawn when choosing a block from a bag containing 7 red, 13 blue and 10 yellow blocks * Predicting that a button being tossed will land on Area 3 most often, conducting the experiment 25 times, recording the results and describing differences between predicted and observed results   Top view of a desk or floor space. A rectangle split into three sections, the largest section is labelled area 3, and two smaller sections labelled area 1 and area 2. | Conduct repeated chance experiments with equally likely outcomes, including with the use of digital tools. Represent results as fractions, compare with others and discuss variation  For example:   * Recording results for 20 trials as fractions, comparing and discussing differences between the results for each group   A circle divided equally into four parts. Each quarter is coloured and labelled. From top left is red, yellow, blue and green (clockwise direction).  A table titled Group results (20 trials) Columns are titled Group 1 to 4 Rows are labelled Red, Blue, Green, Yellow. Data included in the table from first cell reads 4 over 20,  3 over 20, 1 over 20, 6 over 20 6 over 20, 5 over 20, 6 over 20, 4 over 20. 5 over 20, 5 over 20, 7 over 20, 6 over 20 5 over 20, 7 over 20, 6 over 20 and 4 over 20 6 over 20, | Conduct repeated chance experiments and simulations with equally likely or unequally likely outcomes, including with the use of digital tools, for an increasing number of trials. Compare expected and observed frequencies in terms of variation as the number of trials increase  For example:   * Recording the frequency of each outcome for 20, 30, 40 trials and comparing observed frequency with the expected frequency   A circle divided equally into six parts. Each part is coloured and labelled. From top left is blue, red, red, yellow, blue, green (clockwise direction).   * Combining results for groups of students and the whole class, identifying that the results trend closer to the prediction as the number of trials increases |

Sub-strand: Statistics

|  |  |  |  |
| --- | --- | --- | --- |
| Year 3 | Year 4 | Year 5 | Year 6 |
| Describe and interpret real-life data represented in dot plots and column graphs with scale intervals of one  For example:   * Using the dot plot to answer questions, such as ‘How many students have two pets? What was the least common number of pets?’   Example of a dot plot with the title 'Number of Pets at home'. One pet has 4 dots, two pets has 5 dots, 3 pets has 2 dots, 4 pets has 2 dots and 5 pets has one dot.   * Identifying features of column graphs, such as labels, gaps, categories and titles, and answering questions relating to the information in the graph   A column graph titled: How many people have visited each state/territory? Labels on the x-axis are: ACT, New South Wales, Northern Territory, Queensland, South Australia, Victoria and Tasmania.  Labels on the y-axis begin at 0 and end at 12 in equal increments. | Describe and interpret real-life data represented in many-to-one pictographs and column graphs  For example:   * Discussing advantages of  many-to-one representation, such as it is easier to display larger numbers visually, and challenges, such as identifying ‘how many’ are represented by each symbol or reading values for the columns associated with many-to-one representations   A many to one picture graph with the title 'Travel to school'. A key showing that one symbol equals 4 students. There are 3 symbols for walk, one for bus and two for car.   * Answering questions relating to the information in many-to-one graphs, such as ‘How many students liked HPE? How many more students liked Maths more than English?’ ‘How many times as many students like HASS more than The Arts?’   A column graph with the title 'Students' favourite subject'. Labels on the x-axis are: Maths, English, Science, HPE, HASS and Arts.  Labels on the y-axis begin at 0 and end at 120 in equal increments. | Describe and interpret line graphs that show how real-life continuous data changes over time  For example:   * Identifying features of line graphs, such as labels, scale and title, and answering questions relating to the information in the graph   A line graph showing a student's pulse from 0 to 10 minutes after playing sport. | Describe and interpret a range of displays for real-life numerical data, including side-by-side column graphs, using mode, range and shape  For example:   * Recognising that shape describes how data is spread on a graph, for instance whether the responses are grouped, spread out, have more high or low values, or show gaps * Identifying the mode as the most frequently occurring response and the range as the difference between the highest and lowest data values recorded * Interpreting data using mode, range and shape, such as Class 5A has a range of 4, a mode of 0 and the number of students decreases as the number of siblings increases. Compare to Class 5B   A side-by-side column graph with the title 'Number of Siblings'.The x-axis is labelled 'Number of siblings' with the numbers 0, 1, 2, 3, 4, 5: .  The y-axis is labelled 'Number of Students' starting at 1 and going up in equal increments to 12. The data for two classes is shown, class 5A and class 5B. |
|  |  |  | Describe how the features of  real-life data displays may influence an audience  For example:   * Considering how the broken axis may affect the interpretation of a display, such as choosing the second graph to convey that bread prices have fluctuated dramatically in the last 12 months   A line graph showing Price over the last year.   x- axis is labelled 1 to 12. y-axis is labelled 0.5 to 3.5  A line graph showing Price over the last year.   x- axis is labelled 1 to 12. y-axis is labelled 2.8  to 3.3   * Investigating how sizing, colour, labels or scale may have been used in the construction of a display to influence a particular audience or ‘tell a particular story’ |
| In a real-world context, explore questions of interest by collecting categorical or discrete numerical data through observation or surveys. Organise and represent data in dot plots, tables and column graphs and interpret to answer a question  For example:   * Using a suitable method to collect data (observation or survey) to explore a question, such as ‘How do most Year 3 students at our school travel to school?’. Creating a list or table to organise the data and constructing an appropriate display, including with the use of digital tools, to answer the initial question and interpret the data, such as ‘Most students travel by car as there are limited bus services to our school.’ * Using conventions, such as equal spaces on axes, naming and labelling axes and choosing appropriate titles for dot plots and column graphs | In a real-world context, pose questions and collect categorical or discrete numerical data, checking for accuracy and consistency. Organise and represent data in pictographs and column graphs and interpret the data to communicate findings in terms of the context  For example:   * Drafting suitable questions, response categories and recording methods to collect data on topics, such as ‘What is the most popular playground game?’ * Recording responses accurately, including unexpected responses * Creating data displays, including with the use of digital tools, considering appropriate titles, labels, scales and categories for the axes * Interpreting the data displays created, summarising the information, responding to the initial question and discussing any unexpected results | In a real-world context, pose and refine questions, and collect categorical or discrete numerical data. Organise and make choices to represent data. Interpret and communicate findings in terms of the context, and reflect on variation and accuracy  For example:   * Formulating and refining questions such as ‘How did students at my school enjoy the food choices at the end of year event?’ or ‘How many plastic bottles do people in the classroom have in their home bins at the end of a week?’ * Collecting data using numbers to indicate rating, such as   1 = don’t like and 5 = likes a lot   * Choosing and creating data displays such as dot plots, many-to-one column graphs and pictographs, including with the use of digital tools * Discussing if the data provides the information necessary to answer the question and identifying if the type of questions, place, time or people asked could vary the results | In a real-world context involving numerical data   1. analyse the situation to pose a refined question 2. choose the most appropriate way to collect data to ensure accuracy and consistency, and make choices to represent data, including line graphs and  side-by-side column graphs 3. interpret and communicate findings in terms of the context and describe reasons for variation   For example:   * Considering a situation, such as growing plants in different areas of the classroom to formulate and refine a question, such as ‘How does the amount of sunlight affect plant growth?’ Recording and analysing data, including using a spreadsheet. Choosing a line graph to show plant growth over time, using digital tools as appropriate. Interpreting the data to answer the question, considering any reasons for variation in the data, such as distance from light source |

Acknowledgements

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**Number and algebra**

**Understanding number**

**Pre-primary** Third content description, second example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Number Book 1* (p. 4). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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**Year 1** Fourth content description, third example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Number Book 1* (p. 107). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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Fifth content description, first example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Number Book 1* (p. 94). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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Fifth content description, third example diagram adapted from: Department of Education WA. (2013). [Diagram of boxes cut in different ways]. *First Steps in Mathematics, Number Book 1* (p. 101–102). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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**Year 2** Sixth content description, third example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Number Book 1* (p. 128). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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Sixth content description, third example diagram adapted from: Department of Education WA. (2013). [Diagram of boxes cut in halves and quarters]. *First Steps in Mathematics, Number Book 1* (p. 101). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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**Year 3** Seventh diagram adapted from: Department of Education WA. (2013). [Diagram of hexagons]. *First Steps in Mathematics, Number Book 1* (p. 121). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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**Year 4** Seventh diagram adapted from: Department of Education WA. (2013). [Diagram of equivalent fractions]. *First Steps in Mathematics, Number Book 1* (p. 126). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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**Number and algebra**

**Patterns and relationships**

**Year 5** First diagram from: Department of Education WA. (2013). *First Steps in Mathematics, Number Book 2* (p. 260, 261). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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**Year 6** First diagram from: Department of Education WA. (2013). *First Steps in Mathematics, Number Book 2* (p. 257). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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Second diagram from: Department of Education WA. (2013). *First Steps in Mathematics, Number Book 2* (p. 218). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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**Number and algebra**

**Calculating with number**

**Year 5** Fourth content description, third example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Number Book 2* (p. 96). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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**Number and algebra**

**Financial mathematics**

**Pre-Primary** First content description, first example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Number Book 1* (p. 163). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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First content description, second example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Number Book 1* (p. 10). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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**Year 1** First content description, second example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Number Book 1* (p. 163). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/number>  
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**Measurement and geometry**

**Two-dimensional space and structures**

**Year 2** First diagram from: Department of Education WA. (2013). [Diagram of paper clips used as an informal unit measuring tape]. *First Steps in Mathematics, Measurement, Book 1* (p. 118) <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/measurement>   
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**Year 5** Second content description, second example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Measurement, Book 1* (p. 10). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/measurement>  
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Fourth content description, third example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Measurement, Book 1* (p. 145). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/measurement>  
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Third diagram adapted from: Department of Education WA. (2013). [Diagram of irregular areas]. *First Steps in Mathematics, Measurement, Book 1* (p. 145). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/measurement>  
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Fourth diagram from: Department of Education WA. (2013). [Three grid diagrams]. *First Steps in Mathematics, Space, Developing Geometric Understandings* (p. 22). Retrieved August, 2024, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/space>   
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**Measurement and geometry**

**Three-dimensional space and structures**

**Year 1** First content description, third example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Space* (p. 56). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/space>  
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**Year 5** Second content description, second example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Measurement, Book 1* (p. 92). Retrieved March, 2025, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/measurement>  
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**Probability and statistics**

**Probability**

**Pre-primary** First content description, first example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Chance and Data, Developing Probability and Statistics* (p. 15). Retrieved August, 2024, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/chance-and-data>  
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**Year 2** First content description, first example adapted from: Department of Education WA. (2013). *First Steps in Mathematics, Chance and Data, Developing Probability and Statistics* (p. 10). Retrieved August, 2024, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/chance-and-data>  
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**Year 5** First diagram from: Department of Education WA. (2013). [Diagram of four spinners]. *First Steps in Mathematics, Chance and Data, Developing Probability and Statistics* (p. 49). Retrieved August, 2024, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/chance-and-data>  
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**Year 6** First diagram from: Department of Education WA. (2013). [Diagram of numerical chance scale]. *First Steps in Mathematics, Chance and Data, Developing Probability and Statistics* (p. 52). Retrieved August, 2024, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/chance-and-data>  
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**Probability and statistics**

**Statistics**

**Year 2** Third diagram adapted from: Department of Education WA. (2013). [Diagram of block graph]. *First Steps in Mathematics, Chance and Data, Developing Probability and Statistics* (p. 208). Retrieved August, 2024, from <https://myresources.education.wa.edu.au/programs/first-steps-mathematics/chance-and-data>  
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