Mathematics scope and sequence – Foundation Level A to Level 2

Strand: Number

| **Foundation Level A** | **Foundation Level B** | **Foundation Level C** | **Foundation Level D** | **Foundation** | **Level 1** | **Level 2** |
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| **Achievement standards** |
| By the end of Foundation Level A, students participate in and respond to structured learning experiences, including counting, sharing, and adding and taking away from collections, in practical situations. | By the end of Foundation Level B, students identify ‘one’ object and ‘more’ objects, and recognise one or more number names. Students demonstrate an awareness of quantity and use direct comparison to determine ‘more’ and ‘different’ in practical situations, including partitioning and combining collections, sharing collections, and adding to and taking away from collections.  | By the end of Foundation Level C, students recognise and name groups of at least 5. They use counting strategies to quantify collections to at least 5 and subitise to quantify collections to 3. They compare collections to identify ‘more’ and ‘less’. They communicate the number names from zero to at least 5 using stable number order. They partition and combine collections up to 5 in different ways. Students represent practical situations that involve quantifying and adding, taking away one from a collection up to 5 and equal sharing of a collection.  | By the end of Foundation Level D, students make connections between number names, numerals and position in the sequence of numbers from zero to at least 10. They use counting strategies to quantify collections to at least 10 and subitise to quantify collections to 4. Students compare the size of collections to at least 10. They partition and combine collections up to 10 in different ways. Students represent practical situations that involve quantifying, equal sharing between 2, and adding and taking away one from a collection up to 10.  | By the end of Foundation, students make connections between number names, numerals and position in the sequence of numbers from zero to at least 20. They use subitising and counting strategies to quantify collections. Students compare the size of collections to at least 20. They partition and combine collections up to 10 in different ways, representing these with numbers. Students represent practical situations, including simple financial situations involving money, that involve quantifying, equal sharing, adding to and taking away from collections to at least 10.  | By the end of Level 1, students connect number names, numerals and quantities, and order numbers to at least 120. They demonstrate how one- and two-digit numbers can be partitioned in different ways and that two-digit numbers can be partitioned into tens and ones. Students partition collections into equal groups and skip count in twos, fives or tens to quantify collections to at least 120. They solve problems involving addition and subtraction of numbers to 20 and use mathematical modelling to solve practical problems involving addition, subtraction, equal sharing and grouping, using calculation strategies.  | By the end of Level 2, students order and represent numbers to at least 1000; apply knowledge of place value to partition, rearrange and rename two- and three-digit numbers in terms of their parts; and regroup partitioned numbers to assist in calculations. They use mathematical modelling to solve practical additive and multiplicative problems, including money transactions, representing the situation and choosing calculation strategies. Students identify and represent part-whole relationships of halves, quarters and eighths in measurement contexts. |

| **Foundation Level A** | **Foundation Level B** | **Foundation Level C** | **Foundation Level D** | **Foundation** | **Level 1** | **Level 2** |
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| **Content descriptions** |
| *Students:* | *Students learn to:* |
| respond to number names and representations of numberVC2MFAN01 | identify number names and representations of number VC2MFBN01 | name and correctly sequence number names to at least 5VC2MFCN01 | name, represent and order numbers including zero to at least 10, using physical and virtual materials and numerals VC2MFDN01 | name, represent and order numbers, including zero to at least 20, using physical and virtual materials and numerals VC2MFN01 | recognise, represent and order numbers to at least 120 using physical and virtual materials, numerals, number lines and chartsVC2M1N01 | recognise, represent and order numbers to at least 1000 using physical and virtual materials, numerals and number linesVC2M2N01 |
| respond to changing collections of objects VC2MFAN02 | identify, name and represent ‘one’ and ‘more’ using physical and virtual materials VC2MFBN02 | recognise and name the number of objects within a collection up to 3 using subitisingVC2MFCN02 | recognise and name the number of objects within a collection up to 4 using subitisingVC2MFDN02 | recognise and name the number of objects within a collection up to 5 using subitising VC2MFN02 |  |  |
| respond to counting, comparing and labelling of collectionsVC2MFAN03 | compare the quantity of collections using direct comparison to identify which has more or if they are differentVC2MFBN03 | compare collections to at least 5 to identify if the collections are the same or which has ‘more’ and which has ‘less’VC2MFCN03 | quantify and compare collections to at least 10 using counting, and explain or demonstrate reasoningVC2MFDN03 | quantify and compare collections to at least 20 using counting and explain or demonstrate reasoning VC2MFN03 |  |  |
|  |  |  |  |  | partition one- and two-digit numbers in different ways using physical and virtual materials, including partitioning two-digit numbers into tens and onesVC2M1N02 | partition, rearrange, regroup and rename two- and three-digit numbers using standard and non-standard groupings; recognise the role of a zero digit in place value notation VC2M2N02 |
|  |  |  |  |  | quantify sets of objects, to at least 120, by partitioning collections into equal groups using number knowledge and skip counting VC2M1N03 |  |
|  |  |  |  |  |  | recognise and describe one-half as one of 2 equal parts of a whole and connect halves, quarters and eighths through repeated halvingVC2M2N03 |
|  | partition and combine collections to make ‘more’ or ‘different’ VC2MFBN04 | partition and combine collections up to 5 to make ‘more’ and ‘less’ VC2MFCN04 | partition and combine collections up to 10 and find the changed value using counting strategiesVC2MFDN04 | partition and combine collections up to 10 using part-part-whole relationships and subitising to recognise and name the partsVC2MFN04 | add and subtract numbers within 20, using physical and virtual materials, part-part-whole knowledge to 10 and a variety of calculation strategiesVC2M1N04 | add and subtract one- and two-digit numbers, represent problems using number sentences and solve using part-part-whole reasoning and a variety of calculation strategies VC2M2N04 |
|  |  |  |  |  |  | multiply and divide by one-digit numbers using repeated addition, equal grouping, arrays and partitioning to support a variety of calculation strategies VC2M2N05 |
| respond to practical situations involving addition and subtraction of collections with physical and virtual materials VC2MFAN04 | add or take away objects, using physical and virtual materials and matching to determine whether the changed total is more or differentVC2MFBN05 | represent practical situations involving addition, subtraction and quantification up to at least 5 with physical and virtual materials, and use matching or counting strategiesVC2MFCN05 | represent practical situations, including simple financial situations, involving addition, subtraction and quantification up to at least 10 with physical and virtual materials and use matching or counting strategiesVC2MFDN05 | represent practical situations, including simple financial situations, involving addition, subtraction and quantification with physical and virtual materials and use counting or subitising strategiesVC2MFN05 | use mathematical modelling to solve practical problems involving additive situations, including simple money transactions; represent the situations with diagrams, physical and virtual materials; use calculation strategies to solve the problemVC2M1N05 |  |
| respond to sharing objects or a collection equally, in practical situationsVC2MFAN05 | share physical objects and collections equally in practical situationsVC2MFBN06 | represent practical sharing situations involving equal sharing between 2, using physical and virtual materialsVC2MFCN06 | represent practical situations that involve equal sharing of a collection of up to 10 physical or virtual objects and use counting strategiesVC2MFDN06 | represent practical situations that involve equal sharing and grouping with physical and virtual materials and use counting or subitising strategiesVC2MFN06 | use mathematical modelling to solve practical problems involving equal sharing and grouping; represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem VC2M1N06 | use mathematical modelling to solve practical problems involving additive and multiplicative situations, including money transactions; represent situations and choose calculation strategies; interpret and communicate solutions in terms of the context VC2M2N06 |

Strand: Algebra

| **Foundation Level A** | **Foundation Level B** | **Foundation Level C** | **Foundation Level D** | **Foundation** | **Level 1** | **Level 2** |
| --- | --- | --- | --- | --- | --- | --- |
| **Achievement standards** |
| Students respond to cause-and-effect experiences.  | Students initiate cause-and-effect experiences. | Students copy simple repeating patterns.  | Students copy and continue simple repeating patterns.  | Students represent, continue and create simple repeating patterns. | Students use numbers, symbols and objects, including Australian coins, to create skip counting and repeating patterns, identifying the repeating unit.  | Students describe and continue patterns that increase and decrease additively by a constant amount and identify missing elements in the pattern. They recall and demonstrate proficiency with addition and subtraction facts within 20 and multiplication facts for twos. |

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| **Content descriptions** |
| *Students:* | *Students learn to:* |
|  |  |  |  |  | recognise, continue and create pattern sequences, with numbers, symbols, shapes and objects including Australian coins, formed by skip counting, initially by twos, fives and tens VC2M1A01 | recognise, describe and create additive patterns that increase or decrease by a constant amount, using numbers, shapes and objects, and identify missing elements in the patternVC2M2A01 |
|  |  |  |  |  |  | recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts VC2M2A02 |
|  |  |  |  |  |  | recall and demonstrate proficiency with multiplication facts for twos; extend and apply facts to develop the related division facts using doubling and halving  VC2M2A03  |
| respond to actions that have an effectVC2MFAA01 | initiate and repeat actions that have an effectVC2MFBA01 | copy repeating patterns represented in different waysVC2MFCA01 | recognise, copy and continue repeating patterns represented in different waysVC2MFDA01 | follow a short sequence of instructions; recognise, copy, continue and create repeating patterns represented in different waysVC2MFA01 | recognise, continue and create repeating patterns with numbers, symbols, shapes and objects, identifying the repeating unit and recognising the importance of repetition in solving problemsVC2M1A02  | apply repetition in arithmetic operations, including multiplication as repeated addition and division as repeated subtraction VC2M2A04 |

Strand: Measurement

| **Foundation Level A** | **Foundation Level B** | **Foundation Level C** | **Foundation Level D** | **Foundation** | **Level 1** | **Level 2** |
| --- | --- | --- | --- | --- | --- | --- |
| **Achievement standards** |
| Students participate in and respond to measurement activities through structured routine and non-routine activities and events during the school day. | Students identify familiar objects as ‘big’ or ‘little’, using direct comparison in practical situations. They show anticipation in response to routine events when transitioning from one experience to another.  | Students identify the attributes of mass, capacity and length, using direct comparison, in practical situations. They connect familiar events to times of the day.  | Students identify the attributes of mass, capacity, length and duration using direct comparison in practical situations. They order and connect familiar events to times of the day. | Students identify the attributes of mass, capacity, length and duration, and use direct comparison strategies to compare objects and events. They sequence and connect familiar events to the time of day. | Students compare and order objects and events based on the attributes of length, mass, capacity and duration, communicating their reasoning. They measure the length of shapes and objects using uniform informal units.  | Students use uniform informal units to measure and compare shapes and objects. They determine the number of days between events using a calendar and read time on an analog clock to the hour, half-hour and quarter hour. Students use quarter, half, three-quarter and full measures of turn in everyday situations. |

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| **Content descriptions** |
| *Students:* | *Students learn to:* |
|  | identify whether 2 familiar objects are ‘big’ or ‘little’, using direct comparisonVC2MFBM01 | identify and compare attributes of 2 familiar objects, including length, capacity and mass, using direct comparisonVC2MFCM01 | identify and compare attributes of objects and events, including length, capacity, mass and duration, using direct comparison VC2MFDM01 | identify and compare attributes of objects and events, including length, capacity, mass and duration, use direct comparisons and communicate reasoning VC2MFM01 | compare directly and indirectly and order objects and events using attributes of length, mass, capacity and duration, communicating reasoning VC2M1M01  | measure and compare objects based on length, capacity and mass using appropriate uniform informal units and smaller units for accuracy when necessary VC2M2M01 |
|  |  |  |  |  | measure the length of shapes and objects using informal units, recognising that units need to be uniform and used end-to-endVC2M1M02 | identify common uses and represent halves, quarters and eighths in relation to shapes, objects and events VC2M2M02 |
| respond to routine and non-routine events during the school dayVC2MFAM01 | recognise and participate in routine and non-routine daily eventsVC2MFBM02 | identify morning, afternoon and night-time, and connect routine and familiar events to these timesVC2MFCM02 | sequence familiar routines and events using simple ordinal language and connect familiar events to times of the day, including morning, afternoon and night-timeVC2MFDM02 | sequence days of the week and times of the day, including morning, lunchtime, afternoon and night-time, and connect them to familiar events and actions VC2MFM02 | describe the duration and sequence of events using years, months, weeks, days and hours VC2M1M03 | identify the date and determine the number of days between events using calendars VC2M2M03 |
|  |  |  |  |  |  | recognise and read the time represented on an analog clock to the hour, half-hour and quarter hour VC2M2M04 |
|  |  |  |  |  |  | identify, describe and demonstrate quarter, half, three-quarter and full measures of turn in everyday situations VC2M2M05 |

## Strand: Space

| **Foundation Level A** | **Foundation Level B** | **Foundation Level C** | **Foundation Level D** | **Foundation** | **Level 1** | **Level 2** |
| --- | --- | --- | --- | --- | --- | --- |
| **Achievement standards** |
| Students observe and experience shapes and objects and respond to the sorting and naming of them. Students respond when the position of their body changes, and when they move to a different environment. | Students investigate the attributes of shapes and objects. They use direct comparison to determine if shapes and objects are ‘big’ or ‘little’. Students locate objects or people in a familiar environment. | Students name, match and sort familiar shapes and objects based on a single attribute. They describe the location of an object or person in a familiar environment. They follow simple movement instructions.  | Students name, create and sort familiar shapes and objects into like groups and identify familiar shapes in their environment. They describe the position and the location of objects or people in relation to themselves in a familiar space.  | Students name, create and sort familiar shapes and give their reasoning. They describe the position and the location of themselves and objects in relation to other objects and people within a familiar space.  | Students make, compare and classify shapes and objects using identifiable features. They give and follow directions to move people and objects within a space. | Students compare and classify shapes, describing features using formal spatial terms. They locate and identify positions of features in two-dimensional representations and move position by following directions and pathways.  |

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| --- | --- | --- | --- | --- | --- | --- |
| **Content descriptions** |
| *Students:* | *Students learn to:* |
| respond to shapes and objects in their environmentVC2MFASP01 | match and sort objects and shapes that are ‘big’ or ‘little’, using direct comparisonVC2MFBSP01 | sort and name familiar shapes and objects VC2MFCSP01 | sort and name familiar shapes and objects, and recognise and describe familiar shapes within objects in familiar environments VC2MFDSP01 | sort, name and create familiar shapes; recognise and describe familiar shapes within objects in the environment, giving reasonsVC2MFSP01 | make, compare and classify familiar shapes; recognise familiar shapes and objects in the environment, identifying the similarities and differences between them VC2M1SP01 | recognise, compare and classify shapes, referencing the number of sides and using spatial terms such as ‘opposite’, ‘parallel’, ‘curved’ and ‘straight’ VC2M2SP01 |
| respond to movement of objects, people or self within a familiar spaceVC2MFASP02 | indicate the location of known objects within a familiar environment VC2MFBSP02 | describe the location of objects or people within a familiar space, and follow simple instructions to move themselves or an object within a familiar environmentVC2MFCSP02 | describe the position and location of objects or people in relation to themselves or known objects within a familiar spaceVC2MFDSP02 | describe the position and location of themselves and objects in relation to other people and objects within a familiar spaceVC2MFSP02 | give and follow directions to move people and objects to different locations within a space VC2M1SP02 | locate positions in two-dimensional representations of a familiar space; move positions by following directions and pathways VC2M2SP02 |

## Strand: Statistics

| **Foundation Level A** | **Foundation Level B** | **Foundation Level C** | **Foundation Level D** | **Foundation** | **Level 1** | **Level 2** |
| --- | --- | --- | --- | --- | --- | --- |
| **Achievement standards** |
|  |  | Students compare data collected in response to questions in familiar contexts. | Students sort and compare data collected in response to questions in familiar contexts. | Students collect, sort and compare data in response to questions in familiar contexts.  | Students collect and record categorical data, create one-to-one displays, and compare and discuss the data using frequencies. | Students use a range of methods to collect, record, represent and interpret categorical data in response to questions.  |

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| --- | --- | --- | --- | --- | --- | --- |
| **Content descriptions** |
| *Students:* | *Students learn to:* |
|  |  | compare data represented by objects in response to questions that have only 2 outcomes and relate to familiar situationsVC2MFCST01 | sort and compare data represented by objects and images in response to questions that have only 2 outcomes and relate to familiar situationsVC2MFDST01 | collect, sort and compare data represented by objects and images in response to given investigative questions that have only 2 outcomes and relate to familiar situations VC2MFST01 | acquire and record data for categorical variables in various ways including using digital tools, objects, images, drawings, lists, tally marks and symbols VC2M1ST01 | acquire data for categorical variables through surveys, observation, experiment and using digital tools; sort data into relevant categories and display data using lists and tables VC2M2ST01 |
|  |  |  |  |  | represent collected data for a categorical variable using one-to-one displays and digital tools where appropriate; compare the data using frequencies and discuss the findings VC2M1ST02 | create different graphical representations of data using software where appropriate; compare the different representations, and identify and describe common and distinctive features in response to questions VC2M2ST02 |
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