Proficiency Strand

Bond Blocks Addition and Subtraction to 20 covers the highlighted sections of the Australian Curriculum.
australiancurriculum.edu.au/f-10-curriculum/mathematics

Foundation Proficiency Strand Level Description

At this year level:

- **Understanding** includes connecting names, numerals and quantities

- **Fluency** includes readily counting numbers in sequences, continuing patterns and comparing the lengths of objects

- **Problem-Solving** includes using materials to model authentic problems, sorting objects, using familiar counting sequences to solve unfamiliar problems and discussing the reasonableness of the answer

- **Reasoning** includes explaining comparisons of quantities, creating patterns and explaining processes for indirect comparison of length.

Year 1 Proficiency Strand Level Description

At this year level:

- **Understanding** includes connecting names, numerals and quantities, and partitioning numbers in various ways

- **Fluency** includes readily counting number in sequences forwards and backwards, locating numbers on a line and naming the days of the week

- **Problem-Solving** includes using materials to model authentic problems, giving and receiving directions to unfamiliar places, using familiar counting sequences to solve unfamiliar problems and discussing the reasonableness of the answer

- **Reasoning** includes explaining direct and indirect comparisons of length using uniform informal units, justifying representations of data and explaining patterns that have been created.

Year 2 Proficiency Strand Level Description

At this year level:

- **Understanding** includes connecting number calculations with counting sequences, partitioning and combining numbers flexibly and identifying and describing the relationship between addition and subtraction and between multiplication and division

- **Fluency** includes readily counting numbers in sequences, using informal units iteratively to compare measurements, using the language of chance to describe outcomes of familiar chance events and describing and comparing time durations

- **Problem-Solving** includes formulating problems from authentic situations, making models and using number sentences that represent problem situations, and matching transformations with their original shape

- **Reasoning** includes using known facts to derive strategies for unfamiliar calculations, comparing and contrasting related models of operations and creating and interpreting simple representations of data

Year 3 Proficiency Strand Level Description

At this year level:

- **Understanding** includes connecting number representations with number sequences, partitioning and combining numbers flexibly, representing unit fractions, using appropriate language to communicate times, and identifying environmental symmetry

- **Fluency** includes recalling multiplication facts, using familiar metric units to order and compare objects, identifying and describing outcomes of chance experiments, interpreting maps and communicating positions

- **Problem**-Solving includes formulating and modelling authentic situations involving planning methods of data collection and representation, making models of three-dimensional objects and using number properties to continue number patterns

- **Reasoning** includes using generalising from number properties and results of calculations, comparing angles and creating and interpreting variations in the results of data collections and data displays.

Number and Algebra Strand

Foundation Year Content Descriptions Number and Algebra

Number and place value

- Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point (ACMNA001)
- Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond (ACMNA002)
- Subitise small collections of objects (ACMNA003)
- Compare, order and make correspondences between collections, initially to 20, and explain reasoning (ACMNA289)
- Represent practical situations to model addition and sharing (ACMNA004)

Number and place value

- Sort and classify familiar objects and explain the basis for these classifications. Copy, continue and create patterns with objects and drawings (ACMNA005)

Year 1 Content Descriptions Number and Algebra

Number and place value

- Develop confidence with number sequences to and from 100 by ones from any starting point. Skip count by twos, fives and tens starting from zero (ACMNA012)
- Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line (ACMNA013)
  Bond Block focus numbers <30
- Count collections to 100 by partitioning numbers using place value (ACMNA014)
- Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts (ACMNA015)
  - » developing a range of mental strategies for addition and subtraction problems

Patterns and algebra

- Investigate and describe number patterns formed by skip-counting and patterns with objects (ACMNA018)

Year 2 Content Descriptions Number and Algebra

Number and place value

- Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and tens from any starting point, then moving to other sequences (ACMNA026)

- Recognise, model, represent and order numbers to at least 1000 (ACMNA027)

- Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA028)

- Explore the connection between addition and subtraction (ACMNA029)
  - » becoming fluent with partitioning numbers to understand the connection between addition and subtraction
  - » using counting on to identify the missing element in an additive problem

- Solve simple addition and subtraction problems using a range of efficient mental and written strategies (ACMNA030)
  - » becoming fluent with a range of mental strategies for addition and subtraction problems, such as commutativity for addition, building to 10, doubles, 10 facts and adding 10
  - » modelling and representing simple additive situations using materials such as 10 frames, 20 frames and empty number lines

- Recognise and represent multiplication as repeated addition, groups and arrays (ACMNA031)

- Recognise and represent division as grouping into equal sets and solve simple problems using these representations (ACMNA032)

Patterns and algebra

- Describe patterns with numbers and identify missing elements (ACMNA035)
  - » investigating features of number patterns resulting from adding twos, fives or 10s

- Solve problems by using number sentences for addition or subtraction (ACMNA036)
  - » representing a word problem as a number sentence
  - » writing a word problem to represent a number sentence

Year 3 Content Descriptions Number and Algebra

Number and place value

- Investigate the conditions required for a number to be odd or even and identify odd and even numbers (ACMNA051)

- Recognise, model, represent and order numbers to at least 10 000 (ACMNA052)

- Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems (ACMNA053)

- Recognise and explain the connection between addition and subtraction (ACMNA054)
  - » demonstrating the connection between addition and subtraction using partitioning or by writing equivalent number sentences

- Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (ACMNA055)
  - » recognising that certain single-digit number combinations always result in the same answer for addition and subtraction, and using this knowledge for addition and subtraction of larger numbers
  - » combining knowledge of addition and subtraction facts and partitioning to aid computation (for example, $57 + 19 = 57 + 20 - 1$)

- Recall multiplication facts of two, three, five and ten and related division facts (ACMNA056)

- Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies (ACMNA057)

Patterns and algebra

- Describe, continue, and create number patterns resulting from performing addition or subtraction (ACMNA060)