



Australian Curriculum v9 Alignment Guide

**Mental Computation Strategies
Years 1–6**

Contents

Think Mentals (Second Edition) provides 18 modelled mental computation strategies for addition, subtraction, multiplication and division.* Carefully structured and differentiated mental computation questions provide regular practice to build computational fluency.

The Think Mentals computation strategies are at-level and align to the Australian Curriculum Version 9 content descriptions. Think Mentals also provides regular fluency practice and revision in Number, Algebra, Measurement, Space, Statistics and Probability through general fluency questions.*

The general fluency questions are drawn from curriculum content covered in the previous year. Working with familiar concepts and number facts already taught means students can focus on consolidating concepts to build understanding, fluency and speed.

Use this document to see how the Think Mentals strategies align to the Australian Curriculum for each year level.

**Concepts and operations differ across year levels.*

Year 1	3
Year 2	4
Year 3	6
Year 4	7
Year 5	8
Year 6	9

There are 11 pre-strategies and 8 strategies in Think Mentals 1*. The following table outlines how the strategies align to Australian Curriculum content descriptions.

Note: Think Mentals 1 also includes general fluency practice drawn from curriculum content covered in the previous year.

To cater for early learning development, Think Mentals 1 includes preparatory units that teach early maths concepts and friendly number facts.

These units cover important pre-strategies that help students to:

- visualise sets of numbers in different ways
- partition numbers
- recognise where numbers are in relation to each other along a number line.

*Think Mentals 1 is only available as a Student Workbook.

Year 1 Content Descriptions				
Strand	Content Description	Pre-strategies and Strategies		
Number	recognise, represent and order numbers to at least 120 using physical and virtual materials, numerals, number lines and charts (AC9M1N01)	Pre-strategies	Unit 2 Unit 3	Count Forwards and Backwards Picture 10, Count By 10
	partition one- and two-digit numbers in different ways using physical and virtual materials, including partitioning two-digit numbers into tens and ones (AC9M1N02)	Pre-strategies	Unit 4 Unit 10	Split Numbers Up Add 10
	quantify sets of objects, to at least 120, by partitioning collections into equal groups using number knowledge and skip counting (AC9M1N03)	Pre-strategies	Unit 3	Picture 10, Count By 10
	add and subtract numbers within 20, using physical and virtual materials, part-part-whole knowledge to 10 and a variety of calculation strategies (AC9M1N04)	Pre-strategies	Unit 5 Unit 6 Unit 7 Unit 8 Unit 9 Unit 10 Unit 11	Count On 1 Count On 2 Turnarounds Friends of 10 Doubles Add 10 Count Back 1 or 2
		Addition	Unit 14 Unit 15 Unit 16 Unit 17 Unit 18	Near Doubles Near Tens Friendly Jumps Friendly Pairs Split and Add
		Subtraction	Unit 19 Unit 20	Subtract, Think Addition Count On to Subtract
	use mathematical modelling to solve practical problems involving additive situations including simple money transactions; represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem (AC9M1N05)	Addition	Unit 13	Build to 10

Note: Units 1 and 2 build on the following concepts introduced in the Foundation year:

AC9M1N02 recognise and name the number of objects within a collection up to 5 using subitising is revisited and extended in Unit 1 through the pre-strategy Make Mental Pictures.

AC9M1N01 name, represent and order numbers including zero to at least 20, using physical and virtual materials and numerals is revisited and extended in Unit 2 through the pre-strategy Count Forwards and Backwards.

There are 18 strategies in Think Mentals 2. The following table outlines how the strategies align to Australian Curriculum content descriptions.

Note: Think Mentals 2 also includes general maths fluency questions drawn from curriculum content covered in the previous year.

Year 2 Content Descriptions				
Strand	Content Description	Strategies		
Number	recognise and describe one-half as one of 2 equal parts of a whole and connect halves, quarters and eighths through repeated halving (AC9M2N03)	Division	Unit 18	Halving
			Unit 19	Halving, Halving
	add and subtract one- and two-digit numbers, representing problems using number sentences, and solve using part-part-whole reasoning and a variety of calculation strategies (AC9M2N04)	Addition	Unit 2	Friendly Jumps
			Unit 3	Add 10
			Unit 4	Friendly and Fix
			Unit 5	Multiples of 10
			Unit 6	Extended Facts
			Unit 7	Friendly Pairs
			Unit 8	Place Value
		Subtraction	Unit 9	Friendly Jumps
			Unit 10	Subtract 10
			Unit 11	Friendly and Fix
			Unit 12	Multiples of 10
			Unit 13	Extended Facts
			Unit 14	Zeros
			Unit 15	Place Value
	multiply and divide by one-digit numbers using repeated addition, equal grouping, arrays, and partitioning to support a variety of calculation strategies (AC9M2N05)	Multiplication	Unit 16	Doubles
			Unit 17	The Fives
	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 situation (AC9M2N06)	Addition	Unit 2	Friendly Jumps
			Unit 3	Add 10
			Unit 4	Friendly and Fix
			Unit 5	Multiples of 10
			Unit 6	Extended Facts
			Unit 7	Friendly Pairs
			Unit 8	Place Value
		Subtraction	Unit 9	Friendly Jumps
			Unit 10	Subtract 10
			Unit 11	Friendly and Fix
			Unit 12	Multiples of 10
			Unit 13	Extended Facts
			Unit 14	Zeros
			Unit 15	Place Value
		Multiplication	Unit 16	Doubles
			Unit 17	The Fives
		Division	Unit 18	Halving
			Unit 19	Halving, Halving

Year 2 Content Descriptions cont.			
Strand	Content Description	Strategies	
Algebra	recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts (AC9M2A02)	Addition	Unit 2 Friendly Jumps Unit 3 Add 10 Unit 4 Friendly and Fix Unit 5 Multiples of 10 Unit 6 Extended Facts Unit 7 Friendly Pairs Unit 8 Place Value
		Subtraction	Unit 9 Friendly Jumps Unit 10 Subtract 10 Unit 11 Friendly and Fix Unit 12 Multiples of 10 Unit 13 Extended Facts Unit 14 Zeros Unit 15 Place Value
	recall and demonstrate proficiency with multiplication facts for twos; extend and apply facts to develop the related division facts using doubling and halving (AC9M2A03)	Multiplication	Unit 16 Doubles
		Division	Unit 18 Halving Unit 19 Halving, Halving

There are 18 strategies in Think Mentals 3. The following table outlines how the strategies align to Australian Curriculum content descriptions.

Note: Think Mentals 3 also includes general maths fluency questions drawn from curriculum content covered in the previous year.

Year 3 Content Descriptions				
Strand	Content Description	Strategies		
Number	recognise, represent and order natural numbers using naming and writing conventions for numerals beyond 10 000 (AC9M3N01)	Addition	Unit 4 Unit 5	Add 10, Add 100 Friendly and Fix
		Subtraction	Unit 8 Unit 9	Subtract 10, Subtract 100 Friendly and Fix
	recognise and represent unit fractions including $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$ and their multiples in different ways; combine fractions with the same denominator to complete the whole (ACM3N02)	Division	Unit 19	Fractions as Division
	add and subtract two- and three-digit numbers using place value to partition, rearrange and regroup numbers to assist in calculations without a calculator (AC9M3N03)	Addition	Unit 6	Place Value
		Subtraction	Unit 10	Place Value
	multiply and divide one- and two-digit numbers, representing problems using number sentences, diagrams and arrays, and using a variety of calculation strategies (AC9M3N04)	Multiplication	Unit 11 Unit 12 Unit 13 Unit 14	Doubles Double, Doubles The Fives The Tens
		Division	Unit 15 Unit 16 Unit 17 Unit 18	Halving Halving, Halving The Fives The Tens
	use mathematical modelling to solve practical problems involving additive and multiplicative situations including financial contexts; formulate problems using number sentences and choose calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation (AC9M3N06)	Addition	Unit 2 Unit 3 Unit 4 Unit 5 Unit 6	Friendly Jumps Friendly Pairs Add 10, Add 100 Friendly and Fix Place Value
		Subtraction	Unit 7 Unit 8 Unit 9 Unit 10	Friendly Jumps Subtract 10, Subtract 100 Friendly and Fix Place Value
		Multiplication	Unit 11 Unit 12 Unit 13 Unit 14	Doubles Double, Doubles The Fives The Tens
		Division	Unit 15 Unit 16 Unit 17 Unit 18 Unit 19	Halving Halving, Halving The Fives The Tens Fractions as Division
Algebra	extend and apply knowledge of addition and subtraction facts to 20 to develop efficient mental strategies for computation with larger numbers without a calculator (AC9M2A02)	Addition	Unit 2 Unit 3 Unit 4 Unit 5 Unit 6	Friendly Jumps Friendly Pairs Add 10, Add 100 Friendly and Fix Place Value
		Subtraction	Unit 7 Unit 8 Unit 9 Unit 10	Friendly Jumps Subtract 10, Subtract 100 Friendly and Fix Place Value
	recall and demonstrate proficiency with multiplication facts for 3, 4, 5 and 10; extend and apply facts to develop the related division facts (AC9M3A03)	Multiplication	Unit 12 Unit 13 Unit 14	Double, Doubles The Fives The Tens
		Division	Unit 16 Unit 17 Unit 18 Unit 19	Halving, Halving The Fives The Tens Fractions as Division

There are 18 strategies in Think Mentals 4. The following table outlines how the strategies align to Australian Curriculum content descriptions.

Note: Think Mentals 4 also includes general maths fluency questions drawn from curriculum content covered in the previous year.

Year 4 Content Descriptions				
Strand	Content Description	Strategies		
Number	develop efficient strategies and use appropriate digital tools for solving problems involving addition and subtraction, and multiplication and division where there is no remainder (AC9M4N06)	Addition	Unit 2	Friendly Jumps
			Unit 3	Friendly Balance
			Unit 4	Friendly and Fix
			Unit 5	Friendly Pairs
			Unit 6	Place Value
	use mathematical modelling to solve practical problems involving additive and multiplicative situations including financial contexts; formulate the problems using number sentences and choose efficient calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation (AC9M4N08)	Subtraction	Unit 7	Friendly Jumps
			Unit 8	Friendly Balance
			Unit 9	Friendly and Fix
			Unit 10	Place Value
Algebra	recall and demonstrate proficiency with multiplication facts up to 10 x 10 and related division facts; extend and apply facts to develop efficient mental strategies for computation with larger numbers without a calculator (AC9M4A02)	Multiplication	Unit 11	Doubles
			Unit 12	Double, Double
			Unit 13	Ten and Halve
			Unit 14	Friendly and Fix
			Unit 15	Place Value
		Division	Unit 16	Halving
			Unit 17	Halving, Halving
			Unit 18	Split and Divide
			Unit 19	Place Value

There are 18 strategies in Think Mentals 5. The following table outlines how the strategies align to Australian Curriculum content descriptions.

Note: Think Mentals 5 also includes general maths fluency questions drawn from curriculum content covered in the previous year.

Year 5 Content Descriptions			
Strand	Content Description	Strategies	
Number	solve problems involving multiplication of larger numbers by one- or two-digit numbers, choosing efficient calculation strategies and using digital tools where appropriate; check the reasonableness of answers (AC9M5N06)	Multiplication	Unit 11 Doubles and Halves Unit 12 Split and Multiply Unit 13 Five and Fifties Unit 14 Friendly and Fix Unit 15 Place Value
	solve problems involving division, choosing efficient strategies and using digital tools where appropriate; interpret any remainder according to the context and express results as a whole number, decimal or fraction (AC9M5N07)	Division	Unit 16 Fractions as Division Unit 17 Split and Divide Unit 18 Friendly and Fix Unit 19 Place Value
	use mathematical modelling to solve practical problems involving additive and multiplicative situations including financial contexts; formulate the problems, choosing operations and efficient calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation (AC9M5N09)	Addition	Unit 2 Friendly Jumps Unit 3 Friendly Balance Unit 4 Friendly and Fix Unit 5 Friendly Pairs Unit 6 Place Value
		Subtraction	Unit 7 Friendly Jumps Unit 8 Friendly Balance Unit 9 Friendly and Fix Unit 10 Place Value
		Multiplication	Unit 11 Doubles and Halves Unit 12 Split and Multiply Unit 13 Five and Fifties Unit 14 Friendly and Fix Unit 15 Place Value
		Division	Unit 16 Fractions as Division Unit 17 Split and Divide Unit 18 Friendly and Fix Unit 19 Place Value

There are 18 strategies in Think Mentals 6. The following table outlines how the strategies align to Australian Curriculum content descriptions.

Note: Think Mentals 6 also includes general maths fluency questions drawn from curriculum content covered in the previous year.

Year 6 Content Descriptions				
Strand	Content Description	Strategies		
Number	apply knowledge of place value to add and subtract decimals, using digital tools where appropriate; use estimation and rounding to check the reasonableness of answers (AC9M6N04)	Addition	Unit 6	Place Value
		Subtraction	Unit 10	Place Value
	solve problems that require finding a familiar fraction, decimal or percentage of a quantity, including percentage discounts, choosing efficient calculation strategies and using digital tools where appropriate (AC9M6N07)	Division	Unit 16	Division as Percent
	use mathematical modelling to solve practical problems involving natural and rational numbers and percentages, including in financial contexts; formulate the problems, choosing operations and efficient calculation strategies, and using digital tools where appropriate; interpret and communicate solutions in terms of the situation, justifying the choices made (AC9M6N09)	Addition	Unit 2 Unit 3 Unit 4 Unit 5 Unit 6	Friendly Jumps Friendly Balance Friendly and Fix Friendly Pairs Place Value
		Subtraction	Unit 7 Unit 8 Unit 9 Unit 10	Friendly Jumps Friendly Balance Friendly and Fix Place Value
		Multiplication	Unit 11 Unit 12 Unit 13 Unit 14 Unit 15	Doubles and Halves Split and Multiply The Twenty-fives Friendly and Fix Place Value
		Division	Unit 16 Unit 17 Unit 18 Unit 19	Division as Percent Split and Divide Friendly and Fix Place Value