

(no-code)

recognise, represent and order numbers to at least 1000 using physical and , and

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Elaborations

- recognising missing numbers on different ; for example, a with 1800 1800 1 8 0 0 on one end and 220 220 2 2 0 on the other, with every decade numbered
- recognising and locating the position of pieces within hundreds chart puzzles using knowledge of the order of
- reading and writing , and saying and ordering two-, three- and four-digit numbers using patterns in the number system, including numbers with in different places, and numbers that look and sound such as 808 , 880 , 818 808, 880, 818 8 0 8 , 8 8 0 , 8 1 8 and 881 881 8 8 1
- collecting large quantities of materials for recycling; for example, ring pulls, bottle tops and bread tags, and them into ones, tens and hundreds; using the materials to show different representations of two- and three-digit numbers

Students learn to:

recognise, represent and order numbers to at least 1000 using physical and virtual numerals and number lines

(AC9M2N01)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Number sense and algebra

- Number and place value

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Number sense and algebra

- Counting processes

Speaking and listening

- Speaking

Snapshot – Number and place value

Numeracy: Number sense and algebra: Number and place value

Content description

AC9M2N01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Numeral recognition and identification

- identifies, names, writes and interprets numerals up to and beyond 100 100 1 0 0 (e.g. is shown the numerals 70 , 38 , 56 70, 38, 56 7 0 , 3 8 , 5 6 and 26 26 2 6 and when asked "which is 38 38 3 8 ?", identifies the numeral 38 38 3 8 ; writes 18 , 81 18, 81 1 8 , 8 1 and 108 108 1 0 8 with the digits in the correct position; compares the class sizes in a particular year level to determine which class has the greatest number of students)
- identifies the 1 – 9 1-9 1 – 9 repeating sequence of digits, both in and between the decade numerals to order numbers and to predict the number that comes before or after another number (e.g. uses hundreds charts or vertical number lists)
- identifies zero as both a number and a placeholder for reading and writing larger numerals, denoted by the numeral 0 0 0

Place value

- uses knowledge of place value to order numbers represented as numerals within the range of zero to at least 100 100 1 0 0 (e.g. locates the number 21 21 2 1 on a number line between 20 20 2 0 and 22 22 2 2 ; re-orders a set of numerals from least to greatest)
- represents and renames two-digit numbers as counts of tens and ones (e.g. 68 68 6 8 is 6 6 6 tens and 8 8 8 ones, 68 68 6 8 ones, or 60 + 8 60 + 8 6 0 + 8 ; uses physical or virtual materials such

as bundles of 10 10 1 0 tooth picks or base 10 10 1 0 blocks)

Numeral recognition and identification

- identifies, names, writes and interprets a numeral from a range of numerals up to 1000 1000 1 0 0 0 (e.g. is shown the numerals 70 , 318 , 576 70, 318, 576 7 0 , 3 1 8 , 5 7 6 and 276 276 2 7 6 and when asked "which is 276 276 2 7 6 ?" identifies 276 276 2 7 6 ; compares the number of kilojoules in different energy drinks by reading the dietary information)

Place value

- orders and flexibly renames three-digit numbers according to their place value (e.g. 247 247 2 4 7 is 2 2 2 hundreds, 4 4 4 tens and 7 7 7 ones or 2 2 2 hundreds and 47 47 4 7 ones or 24 24 2 4 tens and 7 7 7 ones)
- applies an understanding of zero in place value notation when reading and writing numerals that include internal zeros (e.g. says 807 807 8 0 7 as 8 8 8 hundred and 7 7 7 or 80 80 8 0 tens and 7 7 7 ones, not 80 80 8 0 and 7 7 7)

Numeral recognition and identification

- identifies, reads, writes and interprets numerals beyond 1000 1000 1 0 0 0 applying knowledge of place value, including numerals that contain a zero (e.g. reads 1345 1345 1 3 4 5 as one thousand, 3 3 3 hundred and 45 45 4 5 ; reads one thousand and 15 15 1 5 and writes as 1015 1015 1 0 1 5 ; compares the size of populations of schools, suburbs, cities and ecosystems or the cost of items in shopping catalogues)

Place value

- represents, flexibly partitions and renames four-digit numbers into standard and non-standard place value partitions (e.g. uses grid paper to show the size of each digit in 2202 2202 2 2 0 2 ; renames 5645 5645 5 6 4 5 as 3645 3645 3 6 4 5 and 2000 2000 2 0 0 0 in order to subtract 1998 1998 1 9 9 8)
- estimates and rounds natural numbers to the nearest 10 10 1 0 or nearest 100 100 1 0 0 (e.g. pencils come in a pack of 10 10 1 0 , so estimates the number of packs required for 127 127 1 2 7 Year 6 6 6 students; to check the reasonableness of their solution to the computation $212 + 195$ 212 + 195 2 1 2 + 1 9 5 , rounds both numbers to 200 200 2 0 0)
- represents and names tenths as one out of 10 10 1 0 equal parts of a whole (e.g. uses a bar model to represent the whole and its parts; uses a straw that has been cut into 10 10 1 0 equal pieces to demonstrate that one piece is one-tenth of a whole straw and 2 2 2 pieces are two-tenths of the whole straw)
- represents and names one-tenth as its decimal equivalent (e.g. 0.1 0.1 0 . 1 , zero point one)
- extends the place value system to tenths

Snapshot – Counting processes

Numeracy: Number sense and algebra: Counting processes

Content description

AC9M2N01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Counting sequences

- continues counting from any number forwards and backwards beyond 100 100 1 0 0 using knowledge of place value
- counts in sequence by twos and fives starting at zero (e.g. counts items using number rhymes " 2 , 4 , 6 , 8 2, 4, 6, 8 2 , 4 , 6 , 8 Mary's at the cottage gate ..."; skip counts in fives as " 5 , 10 , 15 , 20 5, 10, 15, 20 5 , 1 0 , 1 5 , 2 0 ")
- counts in sequence forwards and backwards by tens on the decade up to 100 100 1 0 0

Perceptual counting

- counts items in groups of twos, fives and tens (e.g. counts a quantity of 10 10 1 0 -cent pieces as 10 , 20 , 30 10, 20, 30 1 0 , 2 0 , 3 0 ... to give the total value of the coins; counts the number of students by twos when lined up in pairs)

Counting sequences

- counts in sequence forwards and backwards by tens or fives off the decade to 100 100 1 0 0 and by hundreds up to 1000 1000 1 0 0 0 and beyond using knowledge of place value (e.g. 2 , 12 , 22 2, 12,

22 2 , 1 2 , 2 2 ... or 8 , 13 , 18 , 23 8 , 13 , 18 , 23 8 , 1 3 , 1 8 , 2 3 ; 100 , 200 100, 200 1 0 0 , 2 0 0 ... 1000 1000 1 0 0 0)

Perceptual counting

- counts large quantities in groups or multiples (e.g. groups items into piles of 10 10 1 0 , then counts the piles, adding on the residual to quantify the whole collection)
- estimates the number of items to count to assist with determining group sizes (e.g. decides that counting in twos would not be the most efficient counting strategy based on a quick estimate of the quantity and decides instead to use groups of 10 10 1 0)

Counting sequences

- counts forwards and backwards from any number
- applies counting processes flexibly to count in rational numbers (e.g. counts in thirds such as $1\frac{3}{3}$, $2\frac{3}{3}$, $1\frac{1}{3}$, $1\frac{2}{3}$, $2\frac{2}{3}$, $1\frac{1}{3}$, $1\frac{2}{3}$, $2\frac{2}{3}$, $1\frac{1}{3}$, $1\frac{2}{3}$, $2\frac{2}{3}$, $1\frac{1}{3}$, $1\frac{2}{3}$, $2\frac{2}{3}$...; starting from 4 4 4 counts backwards by 0.3 0.3 0 . 3 (e.g. 4 , 3.7 , 3.4 , 3.1 4 , 3.7 , 3.4 , 3.1 4 , 3 . 7 , 3 . 4 , 3 . 1 ...)
- counts backwards from zero understanding that the count can be extended in the negative direction (e.g. 0 0 0 , - 1 1 1 , - 2 2 2 , - 3 3 3 , - 4 4 4)

Abstract counting

- applies counting processes to quantify any type of conceivable collection (e.g. systematically counts the number of possible outcomes of an event; applies a frequency count; estimates and compares the difference between a word or character count in a text)

Snapshot – Speaking

Literacy: Speaking and listening: Speaking

Content description

AC9M2N01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Crafting ideas

- retells personal events and experiences to peers and known adults
- shares feelings and thoughts about the events and characters in text
- retells key details or points from a learning experience or text viewed or heard
- uses mainly appropriate word order
- uses appropriate volume for small audiences
- uses rehearsed phrases to introduce themselves (e.g. "Good morning, my name is ...")

Vocabulary

- uses simple connectives to join ideas (e.g. "and then") (see Grammar)
- uses familiar spoken language to communicate connected ideas (e.g. "Let's draw. I'll get paper and pencils.")
- uses simple adjectives and adverbs to add detail (e.g. "yellow", "quickly") (see Grammar)
- uses a small range of qualifying adjectives (e.g. "nice", "good") (see Grammar)
- uses simple language to compare and contrast (e.g. "smaller", "more")
- uses common time and causal connectives to relate ideas (e.g. "then", "because") (see Grammar)

Crafting ideas

- creates short texts using a few connected sentences, on familiar and learnt topics (e.g. retells a familiar story or describes a process)
- speaks audibly and clearly to a familiar audience (e.g. own class)
- uses some extended sentences
- organises key ideas in logical sequence
- provides some supporting details
- expresses causal relationships (e.g. "when the egg cracked, the chicken came out")
- provides simple justifications (e.g. "I chose cherries because they are red.")
- uses some varying intonation or volume for emphasis
- regulates pace with pausing

Vocabulary

- uses some precise vocabulary from learning areas

- uses connectives to sequence ideas (e.g. "first", "then", "next", "finally") (see Grammar)
- uses vocabulary to express cause and effect (e.g. "The excursion was cancelled because it rained.")
- uses some modal language to influence or persuade (e.g. "should", "will") (see Grammar)

Crafting ideas

- creates spoken texts for a range of purposes across learning areas (e.g. explains how the mathematics problem was solved)
- uses complex sentence constructions including relative clauses (e.g. "The boy who drew the picture got a prize.") (see Grammar)
- adjusts register according to purpose and audience
- elaborates on ideas using a short sequence of sentences
- incorporates learnt content into spoken text
- sequences ideas and events appropriately
- uses mainly correct grammatical constructions (e.g. pronoun references; noun-verb agreement)
- varies volume and intonation to suit purpose and audience
- plans and delivers spoken presentations using appropriate structure and language
- includes video and audio enhancements to spoken texts, where appropriate (e.g. includes slides or pictures in a spoken presentation)

Vocabulary

- experiments with vocabulary drawn from a variety of sources
- uses adverbials to give more precise meaning to verbs (e.g. talking loudly) (see Grammar)
- uses a range of vocabulary to indicate connections (e.g. consequences)
- uses conditional vocabulary to expand upon ideas (e.g. "If Goldilocks ate all the porridge the bears would be hungry.")

AC9M2A01

recognise, describe and create patterns that increase or decrease by a constant amount, using numbers, and , and identify missing in the pattern

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Elaborations

- creating a pattern sequence with materials, writing the associated number sequence, and then describing the sequence so someone else can replicate it with different materials; for example, using matchsticks or toothpicks to create a growing pattern of triangles using 3 3 3 for one triangle, 5 5 5 for 2 2 2 triangles, 7 7 7 for 3 3 3 triangles and describing the pattern as "Start with 3 3 3 and add 2 2 2 each time"
- recognising patterns in the built environment to locate pattern sequences; for example, "How many windows in one train carriage, 2 2 2 train carriages, 3 3 3 train carriages ...?" or "How many wheels on one car, 2 2 2 cars, 3 3 3 cars...?" and recording the results in a diagram or table
- recognising the constant term being added or subtracted in an pattern and using it to identify missing in the sequence
- using or a generative artificial intelligence tool to create patterns that increase or decrease by a constant amount; for example, creating a geometric pattern using , that adds the same number of to the pattern as the pattern increases, and discussing what instructions they input to achieve the output
- recognising patterns in the environment on and in First Nations Australians' material culture; representing them using drawings, coloured counters and numbers

Students learn to:

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 pattern

(AC9M2A01)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Analysing

- Interpret concepts and problems

Generating

- Consider alternatives

Number sense and algebra

- Additive strategies
- Number patterns and algebraic thinking

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Analysing

- Interpret concepts and problems

Generating

- Consider alternatives

Analysing

- Interpret concepts and problems

Generating

- Consider alternatives

Analysing

- Interpret concepts and problems

Generating

- Consider alternatives

Inquiring

- Identify, process and evaluate information

Number sense and algebra

- Additive strategies
- Number patterns and algebraic thinking

Analysing

- Interpret concepts and problems

Creating and exchanging

- Plan

Number sense and algebra

- Number patterns and algebraic thinking

Analysing

- Interpret concepts and problems

Generating

- Consider alternatives

Culture

- First Nations Australians' ways of life reflect unique ways of being, knowing, thinking and doing.

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2A01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2A01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- consider alternatives by suggesting a different way to approach a given task or problem

- consider alternatives and explore different or creative ways to approach a task or problem
- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option

Snapshot – Additive strategies

Numeracy: Number sense and algebra: Additive strategies

Content description

AC9M2A01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Flexible strategies with combinations to 10

- describes subtraction as the difference between numbers rather than taking away using diagrams and a range of representations (e.g. using a number line to represent $8 - 3$ and $3 - 3$ as the difference between 8 and 3)
- uses a range of strategies to add or subtract 2 or more numbers within the range of 1 - 20 (e.g. bridging to 10; near doubles; adding the same to both numbers $7 + 8 = 15$ because double 8 is 16 and 7 is one less than 8; $8 + 6 = 14$ because $8 + 2 = 10$ and $4 + 4 = 8$ more is 14; $15 - 8 = 7$ because I can add 2 to both to give $17 - 10 = 7$)
- uses knowledge of part-part-whole number construction to partition natural numbers into parts to solve addition and subtraction problems (e.g. to solve $6 + 6 = 12$, says "6 plus 6 makes 12", and "3 more ... so it's 9")
- represents additive situations using number sentences and part-part-whole diagrams including when different parts or the whole are unknown (e.g. uses the number sentence $8 - 3 = 5$ to represent the problem "I had 8 pencils. I gave 3 to Max. I now have 5 remaining"; matches the number sentence $4 + 4 = 8$ to the problem, "I have 9 cups and only 4 saucers, how many more saucers do I need?")

Flexible strategies with two-digit numbers

- chooses from a range of known strategies to solve additive problems involving two-digit numbers (e.g. uses place value knowledge, known addition facts and part-part-whole number knowledge to solve problems like $24 + 8 = 32$, partitions 8 as 6 and 2, then combines 24 and 6 to rename it as 30 before combining it with 2 to make 32, and then combines the remaining 2 to find 34; adds the same quantity to both numbers $47 - 38 = 9$ because $47 - 40 = 7$ and $40 - 38 = 2$ so $7 + 2 = 9$)
- identifies that the same combinations and partitions to 10 are repeated within each decade (e.g. knowing that $8 + 2 = 10$, knows $18 + 2 = 20$, $28 + 2 = 30$ etc.)
- identifies addition as associative and commutative and that subtraction is neither
- applies the commutative and associative properties of addition to simplify mental computation (e.g. to calculate $23 + 9 + 7$, adds $23 + 9 = 32$ then $32 + 7 = 39$)
- applies inverse relationship of addition and subtraction to solve problems, including solving problems with digital tools, and uses the inverse relationship to justify an answer (e.g. when solving $23 - 16$, chooses to use addition $16 + ? = 23$ because $16 + 7 = 23$; when using a calculator to solve $16 + ? = 38$, decides to use subtraction and inputs $38 - 16$)
- represents a wide range of additive problem situations involving two-digit numbers using appropriate addition and subtraction number sentences

Flexible strategies with three-digit numbers and beyond

- uses place value, standard and non-standard partitioning, trading or exchanging of units to mentally add and subtract numbers with 3 or more digits (e.g. to add 250 and 457, partitions 250 into 200 and 50, says 457 plus 200 is 657, plus 50 is 707; to add 184 and 270, partitions into $150 + 34$ and $250 + 20 = 500$, then $34 + 20 = 54$, so $500 + 54 = 554$)

- chooses and uses strategies including algorithms and technology to efficiently solve additive problems (e.g. develops total costings for ingredients or materials for a task or combines measurements to determine the total amount of materials required)
- uses estimation to determine the reasonableness of the solution to an additive problem (e.g. when asked to add 249 249 2 4 9 and 437 437 4 3 7 says " 250 + 440 250 + 440 2 5 0 + 4 4 0 is 690 690 6 9 0 ")
- represents a wide range of familiar real-world additive situations involving large numbers as standard number sentences explaining their reasoning

Snapshot – Number patterns and algebraic thinking

Numeracy: Number sense and algebra: Number patterns and algebraic thinking

Content description

AC9M2A01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Identifying and creating patterns

- identifies the pattern unit with a simple repeating pattern (e.g. identifies the repeating pattern red, blue, red, blue with red then blue; identifies the repeating patterns in everyday activities, days of the week or seasons of the year)
- continues and creates repeating patterns involving the repetition of a pattern unit with shapes, movements, sounds, physical and virtual materials and numbers (e.g. circle, square, circle, square; stamp, clap, stamp, clap; 1, 2, 3, 1, 2, 3, 1, 2, 3 1,2,3, 1,2,3, 1,2,3 1, 2, 3, 1, 2, 3, 1, 2, 3)
- identifies, continues and creates simple geometric patterns involving shapes, physical or virtual materials
- determines a missing element within a pattern involving shapes, physical or virtual materials
- conceptually subitises by identifying patterns in standard representations (e.g. patterns within ten-frames, uses finger patterns to represent a quantity)

Continuing and generalising patterns

- represents growing patterns where the difference between each successive term is constant, using physical and virtual materials, then summarising the pattern numerically (e.g. constructs a pattern using physical materials such as toothpicks, then summarises the number of toothpicks used as 4, 7, 10, 13 4, 7, 10, 13 4, 7, 10, 13 ...)
- describes rules for replicating or continuing growing patterns where the difference between each successive term is the same (e.g. to determine the next number in the pattern 3, 6, 9, 12 3, 6, 9, 12 3, 6, 9, 12 ... you add 3 3 3 ; for 20, 15, 10 20, 15, 10 20, 15, 10 ... the rule is described as each term is generated by subtracting 5 5 5 from the previous term)

Relational thinking

- uses the equals sign to represent "is equivalent to" or "is the same as" in number sentences (e.g. when asked to write an expression that is equivalent to $5 + 3$ $5 + 3$ $5 + 3$, responds $6 + 2$ $6 + 2$ $6 + 2$ and then writes $5 + 3 = 6 + 2$ $5 + 3 = 6 + 2$ $5 + 3 = 6 + 2$)
- solves number sentences involving unknowns using the inverse relationship between addition and subtraction (e.g. $3 + \text{ } = \text{ } + 3$ $3 + ? = 5$ $5 = 5$ and knowing $5 - 3 = 2$ $5 - \text{ } = \text{ } - 3$ $5 - 3 = 2$ then ? must be 2 2 2)

Generalising patterns

- represents growing patterns where each successive term is determined by multiplying the previous term by a constant, using concrete materials, then summarises the pattern numerically (e.g. constructs a pattern using concrete materials such as tiles then summarises the pattern as 2, 6, 18, 54 2, 6, 18, 54 2, 6, 18, 54 ...)
- describes rules for copying or continuing patterns where each successive term is found by multiplying or dividing the previous term by the same factor (e.g. to determine the next term in the pattern 1, 3, 9, 27 1, 3, 9, 27 1, 3, 9, 27 ... multiply by 3 3 3)

Relational thinking

- uses relational thinking to determine the missing values in a number sentence (e.g. $6 + 6 + \text{ } = 6 + ? = 7 + 4 = 7 + 4 = 7 + 4$)

- uses equivalent number sentences involving addition or subtraction to calculate efficiently or to find an unknown (e.g. $527 + 96 = 527 + 96 = \text{\space 5 2 7} + \text{\space 9 6} = ?$ is the same as $527 + 100 - 4 = 527 + 100 \text{\space} - 4 = \text{\space 5 2 7} + \text{\space 1 0 0} - 4 = ?$; If $6 + 6 + \text{\space 6} + ? = 8 + 3 = 8 + 3 = 8 + 3$, then as I know $8 = 6 + 2$ $8 = 6 + 2$ $8 = 6 + 2$, I can write $8 + 3$ $8 + 3$ $8 + 3$ as $6 + 2 + 3$ $6 + 2 + 3$ $6 + 2 + 3$, which is the same as $6 + 5$ $6 + 5$ $6 + 5$ therefore '?' is 5 5 5)
- solves numerical equations involving unknowns using the inverse relationship between multiplication and division (e.g. determines the missing number in $2 \times 2 \text{\space} 2 \times ? = 10 = 10$ knowing $10 \div 2$ $10 \div 2$ $10 \div 2$ is equal to 5 5 5 then ? must be 5 5 5)

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2A01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2A01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- consider alternatives by suggesting a different way to approach a given task or problem
- consider alternatives and explore different or creative ways to approach a task or problem
- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2A01

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Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

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Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2A01

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Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2A01

Continuum extract

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- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2A01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Additive strategies

Numeracy: Number sense and algebra: Additive strategies

Content description

AC9M2A01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Flexible strategies with combinations to 10

- describes subtraction as the difference between numbers rather than taking away using diagrams and a range of representations (e.g. using a number line to represent $8 - 3$ as the difference between 8 and 3)
- uses a range of strategies to add or subtract 2 or more numbers within the range of 1 - 20 (e.g. bridging to 10; near doubles; adding the same to both numbers $7 + 8 = 15$ because double 8 is 16 and 7 is one less than 8; $8 + 6 = 14$ because $8 + 2 = 10$ and $4 + 4 = 8$; $15 - 8 = 7$ because I can add 2 to both to give $17 - 10 = 7$)
- uses knowledge of part-part-whole number construction to partition natural numbers into parts to solve addition and subtraction problems (e.g. to solve $6 + 6 = 12$, says "6 plus 4 makes 10, and 3 more ... so it's 13")
- represents additive situations using number sentences and part-part-whole diagrams including when different parts or the whole are unknown (e.g. uses the number sentence $8 - 3 = 5$ to represent the problem "I had 8 pencils. I gave 3 to Max. I now have 5 remaining"; matches the number sentence $4 + 4 = 8$ to the problem, "I have 9 cups and only 4 saucers, how many more saucers do I need?")

Flexible strategies with two-digit numbers

- chooses from a range of known strategies to solve additive problems involving two-digit numbers

(e.g. uses place value knowledge, known addition facts and part-part-whole number knowledge to solve problems like $24 + 8 + 13$ $24 + 8 + 13$ $24 + 8 + 13$, partitions 888 as 666 and 222 more, then combines 2424 and 666 to rename it as 303030 before combining it with 131313 to make 434343 , and then combines the remaining 222 to find 454545 ; adds the same quantity to both numbers $47 - 38 = 49 - 40$ $47 - 38 = 49 - 40$ $47 - 38 = 49 - 40$)

- identifies that the same combinations and partitions to 101010 are repeated within each decade (e.g. knowing that $8 + 2 = 10$ $8 + 2 = 10$ $8 + 2 = 10$, knows $18 + 2 = 20$ $18 + 2 = 20$ $18 + 2 = 20$ and $28 + 2 = 30$ $28 + 2 = 30$ $28 + 2 = 30$ etc.)
- identifies addition as associative and commutative and that subtraction is neither
- applies the commutative and associative properties of addition to simplify mental computation (e.g. to calculate $23 + 9 + 7$ $23 + 9 + 7$ $23 + 9 + 7$ adds 232323 to 777 to get 303030 , then adds 999 to give 393939)
- applies inverse relationship of addition and subtraction to solve problems, including solving problems with digital tools, and uses the inverse relationship to justify an answer (e.g. when solving $23 - 16$ $23 - 16$ chooses to use addition $16 + ? = 23$ $16 + ? = 23$ $16 + ? = 23$; when using a calculator to solve $16 + ? = 38$ $16 + ? = 38$ $16 + ? = 38$ decides to use subtraction and inputs $38 - 16$ $38 - 16$ $38 - 16$)
- represents a wide range of additive problem situations involving two-digit numbers using appropriate addition and subtraction number sentences

Flexible strategies with three-digit numbers and beyond

- uses place value, standard and non-standard partitioning, trading or exchanging of units to mentally add and subtract numbers with 333 or more digits (e.g. to add 250250 and 457457 , partitions 250250 into 222 hundreds and 555 tens, says 457457 plus 222 hundreds is 657657 , plus 555 tens is 707707 ; to add 184184 and 270270 partitions into $150 + 34 + 250 + 20 = 400 + 34 + 20 = 454$ $150 + 34 + 250 + 20 = 400 + 34 + 20 = 454$ $150 + 34 + 250 + 20 = 400 + 34 + 20 = 454$)
- chooses and uses strategies including algorithms and technology to efficiently solve additive problems (e.g. develops total costings for ingredients or materials for a task or combines measurements to determine the total amount of materials required)
- uses estimation to determine the reasonableness of the solution to an additive problem (e.g. when asked to add 249249 and 437437 says " $250 + 440$ $250 + 440$ $250 + 440$ is 690690 ")
- represents a wide range of familiar real-world additive situations involving large numbers as standard number sentences explaining their reasoning

Snapshot – Number patterns and algebraic thinking

Numeracy: Number sense and algebra: Number patterns and algebraic thinking

Content description

AC9M2A01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Identifying and creating patterns

- identifies the pattern unit with a simple repeating pattern (e.g. identifies the repeating pattern red, blue, red, blue with red then blue; identifies the repeating patterns in everyday activities, days of the week or seasons of the year)
- continues and creates repeating patterns involving the repetition of a pattern unit with shapes, movements, sounds, physical and virtual materials and numbers (e.g. circle, square, circle, square; stamp, clap, stamp, clap; $1, 2, 3, 1, 2, 3, 1, 2, 3$ $1, 2, 3, 1, 2, 3, 1, 2, 3$ $1, 2, 3, 1, 2, 3, 1, 2, 3$)
- identifies, continues and creates simple geometric patterns involving shapes, physical or virtual materials
- determines a missing element within a pattern involving shapes, physical or virtual materials
- conceptually subitises by identifying patterns in standard representations (e.g. patterns within ten-frames, uses finger patterns to represent a quantity)

Continuing and generalising patterns

- represents growing patterns where the difference between each successive term is constant, using

physical and virtual materials, then summarising the pattern numerically (e.g. constructs a pattern using physical materials such as toothpicks, then summarises the number of toothpicks used as 4, 7, 10, 13, 4, 7, 10, 13, 4, 7, 10, 13 ...)

- describes rules for replicating or continuing growing patterns where the difference between each successive term is the same (e.g. to determine the next number in the pattern 3, 6, 9, 12, 3, 6, 9, 12, 3, 6, 9, 12 ... you add 3 3 3; for 20, 15, 10, 20, 15, 10, 20, 15, 10 ... the rule is described as each term is generated by subtracting 5 5 5 from the previous term)

Relational thinking

- uses the equals sign to represent "is equivalent to" or "is the same as" in number sentences (e.g. when asked to write an expression that is equivalent to $5 + 3$, $5 + 3 + 3$, responds $6 + 2$, $6 + 2 + 2$, $6 + 2$ and then writes $5 + 3 = 6 + 2$, $5 + 3 = 6 + 2$, $5 + 3 = 6 + 2$)
- solves number sentences involving unknowns using the inverse relationship between addition and subtraction (e.g. $3 + ? = 5$, $5 - 3 = 2$ and knowing $5 - 3 = 2$ then $?$ must be 2)

Generalising patterns

- represents growing patterns where each successive term is determined by multiplying the previous term by a constant, using concrete materials, then summarises the pattern numerically (e.g. constructs a pattern using concrete materials such as tiles then summarises the pattern as 2, 6, 18, 54, 2, 6, 18, 54, 2, 6, 18, 54 ...)
- describes rules for copying or continuing patterns where each successive term is found by multiplying or dividing the previous term by the same factor (e.g. to determine the next term in the pattern 1, 3, 9, 27, 1, 3, 9, 27, 1, 3, 9, 27 ... multiply by 3)

Relational thinking

- uses relational thinking to determine the missing values in a number sentence (e.g. $6 + ? = 7 + 4$, $6 + ? = 7 + 4 = 7 + 4$)
- uses equivalent number sentences involving addition or subtraction to calculate efficiently or to find an unknown (e.g. $527 + 96 = 527 + 96$ is the same as $527 + 100 - 4 = 527 + 100 - 4$; If $6 + ? = 8 + 3 = 8 + 3 = 8 + 3$, then as I know $8 = 6 + 2$, $8 = 6 + 2$, I can write $8 + 3 = 6 + 2 + 3$, which is the same as $6 + 5$ therefore $?$ is 5)
- solves numerical equations involving unknowns using the inverse relationship between multiplication and division (e.g. determines the missing number in $2 \times ? = 10$, $10 \div 2 = 5$ then $?$ must be 5)

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2A01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Plan

Digital Literacy: Creating and exchanging: Plan

Content description

AC9M2A01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- use simple digital tools to contribute to a basic plan to complete a task
- use familiar digital tools to develop and follow a basic plan to complete a task

Snapshot – Number patterns and algebraic thinking

Numeracy: Number sense and algebra: Number patterns and algebraic thinking

Content description

AC9M2A01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Identifying and creating patterns

- identifies the pattern unit with a simple repeating pattern (e.g. identifies the repeating pattern red, blue, red, blue with red then blue; identifies the repeating patterns in everyday activities, days of the week or seasons of the year)
- continues and creates repeating patterns involving the repetition of a pattern unit with shapes, movements, sounds, physical and virtual materials and numbers (e.g. circle, square, circle, square; stamp, clap, stamp, clap; 1, 2, 3, 1, 2, 3, 1, 2, 3 1,2,3, 1,2,3, 1,2,3 1, 2, 3, 1, 2, 3, 1, 2, 3)
- identifies, continues and creates simple geometric patterns involving shapes, physical or virtual materials
- determines a missing element within a pattern involving shapes, physical or virtual materials
- conceptually subitises by identifying patterns in standard representations (e.g. patterns within ten-frames, uses finger patterns to represent a quantity)

Continuing and generalising patterns

- represents growing patterns where the difference between each successive term is constant, using physical and virtual materials, then summarising the pattern numerically (e.g. constructs a pattern using physical materials such as toothpicks, then summarises the number of toothpicks used as 4, 7, 10, 13 4, 7, 10, 13 4, 7, 10, 13 ...)
- describes rules for replicating or continuing growing patterns where the difference between each successive term is the same (e.g. to determine the next number in the pattern 3, 6, 9, 12 3, 6, 9, 12 3, 6, 9, 12 ... you add 3 3 3 ; for 20, 15, 10 20, 15, 10 20, 15, 10 ... the rule is described as each term is generated by subtracting 5 5 5 from the previous term)

Relational thinking

- uses the equals sign to represent "is equivalent to" or "is the same as" in number sentences (e.g. when asked to write an expression that is equivalent to $5 + 3$ $5 + 3$, responds $6 + 2$ $6 + 2$ $6 + 2$ and then writes $5 + 3 = 6 + 2$ $5 + 3 = 6 + 2$ $5 + 3 = 6 + 2$)
- solves number sentences involving unknowns using the inverse relationship between addition and subtraction (e.g. $3 + 3 = 5$ $3 + ? = 5$ $5 - 3 = 2$ and knowing $5 - 3 = 2$ $5 - 3 = 2$ then ? must be 2 2 2)

Generalising patterns

- represents growing patterns where each successive term is determined by multiplying the previous term by a constant, using concrete materials, then summarises the pattern numerically (e.g. constructs a pattern using concrete materials such as tiles then summarises the pattern as 2, 6, 18, 54 2, 6, 18, 54 2, 6, 18, 54 ...)
- describes rules for copying or continuing patterns where each successive term is found by multiplying or dividing the previous term by the same factor (e.g. to determine the next term in the pattern 1, 3, 9, 27 1, 3, 9, 27 1, 3, 9, 27 ... multiply by 3 3 3)

Relational thinking

- uses relational thinking to determine the missing values in a number sentence (e.g. $6 + 6 = 12$ $6 + ? = 12$ $6 + 6 = 12$)
- uses equivalent number sentences involving addition or subtraction to calculate efficiently or to find an unknown (e.g. $527 + 96 = 527 + 96 = 623$ $527 + 96 = ?$ is the same as $527 + 100 - 4 = 623$ $527 + 100 - 4 = 623$; If $6 + 6 = 12$ $6 + ? = 8$ $6 + ? = 8$ $6 + ? = 8$, then as I know $8 = 6 + 2$ $8 = 6 + 2$ $8 = 6 + 2$, I can write $8 + 3$ $8 + 3$ $8 + 3$ as $6 + 2 + 3$ $6 + 2 + 3$, which is the same as $6 + 5$ $6 + 5$ $6 + 5$ therefore '?' is 5 5 5)
- solves numerical equations involving unknowns using the inverse relationship between multiplication and division (e.g. determines the missing number in $2 \times 2 = 4$ $2 \times ? = 10$ $10 = 2 \times 5$ knowing $10 \div 2 = 5$ $10 \div 2 = 5$ then ? must be 5 5 5)

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2A01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2A01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- consider alternatives by suggesting a different way to approach a given task or problem
- consider alternatives and explore different or creative ways to approach a task or problem
- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option

AC9M2A02

recall and demonstrate proficiency with to 20; extend and apply facts to develop related subtraction facts

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Elaborations

- using ten-frames or materials such as connecting cubes to develop and record addition and subtraction strategies including doubles, near doubles, on, combinations to 10 10 1 0 and bridging to 10 10 1 0 , explaining patterns and connections noticed within the facts
- and rearranging collections to practice and develop fluency with addition and subtraction facts to 20 20 2 0 leading to the recall of these facts; for example, using materials and part-part-whole diagrams to develop subtraction facts related to , such as $8 + 7 = 15$ $8 + 7 = 15$ $8 + 7 = 15$ therefore, $15 - 7 = 8$ $15 - 7 = 8$ $15 - 7 = 8$ and $15 - 8 = 7$ $15 - 8 = 7$ $15 - 8 = 7$
- using to develop and record facts systematically; for example, “How many ways can 10 10 1 0 birds be among 2 2 2 trees?”, $10 = 10 + 0$ $10 = 10 + 0$ $10 = 10 + 0$, $10 = 9 + 1$ $10 = 9 + 1$ $10 = 9 + 1$, $10 = 8 + 2$ $10 = 8 + 2$ $10 = 8 + 2$, $10 = 7 + 3$ $10 = 7 + 3$ $10 = 7 + 3$, ...; explaining how they know they have found all possible

Students learn to:

recall and demonstrate proficiency with addition facts to 20; extend and apply facts related subtraction facts

(AC9M2A02)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Analysing

- Interpret concepts and problems

Generating

- Consider alternatives

Number sense and algebra

- Additive strategies

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Analysing

- Interpret concepts and problems
- Draw conclusions and provide reasons

Number sense and algebra

- Number and place value

Analysing

- Interpret concepts and problems
- Draw conclusions and provide reasons

Generating

- Consider alternatives
- Put ideas into action

Number sense and algebra

- Number and place value

Resources

Work Samples

WS01 - Fractions

WS02 - Trick or treat

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2A02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2A02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- consider alternatives by suggesting a different way to approach a given task or problem
- consider alternatives and explore different or creative ways to approach a task or problem
- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option

Snapshot – Additive strategies

Numeracy: Number sense and algebra: Additive strategies

Content description

AC9M2A02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Counting back (by ones)

- represents and uses a range of counting strategies to solve subtraction problems such as counting-down-from, counting-up-from, counting-down-to (e.g. to solve "Mia had 10 10 1 0 cupcakes. She gave 3 3 3 cupcakes away. How many cupcakes does Mia have left?" counts back from 10 10 1 0 , " 9 , 8 , 7 9 , 8 , 7 9 , 8 , 7 , Mia has 7 7 7 left"; to solve 12 12 1 2 take away something equals 8 8 8 , responds " 12 12 1 2 take away one is 11 11 1 1 , then 10 , 9 , 8 10 , 9 , 8 1 0 , 9 , 8 , It's 4 4 4 ")

Flexible strategies with combinations to 10

- describes subtraction as the difference between numbers rather than taking away using diagrams and a range of representations (e.g. using a number line to represent $8 - 3$ \space–\space 3 8 – 3 as the difference between 8 8 8 and 3 3 3)
- uses a range of strategies to add or subtract 2 2 2 or more numbers within the range of 1 1 1 - 20 20 2 0 (e.g. bridging to 10 10 1 0 ; near doubles; adding the same to both numbers $7 + 8 = 15$ 7 + 8

$= 15$ $7 + 8 = 15$ because double 8 8 8 is 16 16 1 6 and 7 7 7 is one less than 8 8 8 ; $8 + 6 = 14$ $8 + 6 = 14$ $8 + 6 = 14$ because $8 + 2 = 10$ $8 + 2 = 10$ $8 + 2 = 10$ and 4 4 4 more is 14 14 1 4 ; $15 - 8 = 7$ $15 - 8 = 7$ because I can add 2 2 2 to both to give $17 - 10 = 7$ $17 - 10 = 7$)

- uses knowledge of part-part-whole number construction to partition natural numbers into parts to solve addition and subtraction problems (e.g. to solve $6 + 6 + ? = 13$, says " 6 6 6 plus 4 4 4 makes 10 10 1 0 , and 3 3 3 more ... so it's 7 7 7 ")
- represents additive situations using number sentences and part-part-whole diagrams including when different parts or the whole are unknown (e.g. uses the number sentence $8 - 3 = 5$ $8 - 3 = 5$ to represent the problem "I had 8 8 8 pencils. I gave 3 3 3 to Max. I now have 5 5 5 remaining"; matches the number sentence $4 + 4 + ? = 9$ $4 + ? = 9$ to the problem, "I have 9 9 9 cups and only 4 4 4 saucers, how many more saucers do I need?")

Flexible strategies with two-digit numbers

- chooses from a range of known strategies to solve additive problems involving two-digit numbers (e.g. uses place value knowledge, known addition facts and part-part-whole number knowledge to solve problems like $24 + 8 + 13$ $24 + 8 + 13$ $24 + 8 + 13$, partitions 8 8 8 as 6 6 6 and 2 2 2 more, then combines 24 24 2 4 and 6 6 6 to rename it as 30 30 3 0 before combining it with 13 13 1 3 to make 43 43 4 3 , and then combines the remaining 2 2 2 to find 45 45 4 5 ; adds the same quantity to both numbers $47 - 38 = 49 - 40$ $47 - 38 = 49 - 40$ $47 - 38 = 49 - 40$)
- identifies that the same combinations and partitions to 10 10 1 0 are repeated within each decade (e.g. knowing that $8 + 2 = 10$ $8 + 2 = 10$ $8 + 2 = 10$, knows $18 + 2 = 20$ $18 + 2 = 20$ $18 + 2 = 20$ and $28 + 2 = 30$ $28 + 2 = 30$ $28 + 2 = 30$ etc.)
- identifies addition as associative and commutative and that subtraction is neither
- applies the commutative and associative properties of addition to simplify mental computation (e.g. to calculate $23 + 9 + 7$ $23 + 9 + 7$ $23 + 9 + 7$ adds 23 23 2 3 to 7 7 7 to get 30 30 3 0 , then adds 9 9 9 to give 39 39 3 9)
- applies inverse relationship of addition and subtraction to solve problems, including solving problems with digital tools, and uses the inverse relationship to justify an answer (e.g. when solving $23 - 16$ $23 - 16$ chooses to use addition $16 + ? = 23$ $16 + ? = 23$ $16 + ? = 23$; when using a calculator to solve $16 + ? = 38$ $16 + ? = 38$ $16 + ? = 38$ decides to use subtraction and inputs $38 - 16$ $38 - 16$ $38 - 16$)
- represents a wide range of additive problem situations involving two-digit numbers using appropriate addition and subtraction number sentences

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2A02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9M2A02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- draw conclusions and make choices when completing tasks and identify the reasons for choices made
- draw conclusions and make choices when completing tasks and explain the reasons for choices made
- draw conclusions and make choices when completing tasks, using observation and prior knowledge to provide reasons and construct arguments for choices made

Snapshot – Number and place value

Numeracy: Number sense and algebra: Number and place value

Content description

AC9M2A02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Numeral recognition and identification

- identifies, names, writes and interprets numerals up to 20 20 2 0 (e.g. when shown the numerals 4 , 17 , 9 4, 17, 9 4 , 1 7 , 9 and 16 16 1 6 and asked, "which is 16 16 1 6 ?", points to the numeral 16 16 1 6 or when shown the numeral 17 17 1 7 says its correct name; when role-playing simple money transactions, counts out 9 9 9 one-dollar coins to pay for an item that costs \$ 9 \ \$9 \$ 9
- identifies and uses the 1 – 9 1–9 1 – 9 repeating sequence in the writing of teen numerals
- identifies a whole quantity as the result of recognising smaller quantities up to 20 20 2 0 (e.g. uses part-part-whole knowledge of numbers to solve problems)

Developing place value

- orders numbers from 1 – 20 1–20 1 – 2 0 (e.g. determines the largest number from a group of numbers in the range from one to 20 20 2 0 ; students are allocated a number between one and 20 20 2 0 and asked to arrange themselves in numerical order)
- represents and describes teen numbers as 10 10 1 0 and some more (e.g. 16 16 1 6 is 10 10 1 0 and 6 6 6 more; uses ten-frames to represent teen numbers)

Numeral recognition and identification

- identifies, names, writes and interprets numerals up to and beyond 100 100 1 0 0 (e.g. is shown the numerals 70 , 38 , 56 70, 38, 56 7 0 , 3 8 , 5 6 and 26 26 2 6 and when asked "which is 38 38 3 8 ?", identifies the numeral 38 38 3 8 ; writes 18 , 81 18, 81 1 8 , 8 1 and 108 108 1 0 8 with the digits in the correct position; compares the class sizes in a particular year level to determine which class has the greatest number of students)
- identifies the 1 – 9 1-9 1 – 9 repeating sequence of digits, both in and between the decade numerals to order numbers and to predict the number that comes before or after another number (e.g. uses hundreds charts or vertical number lists)
- identifies zero as both a number and a placeholder for reading and writing larger numerals, denoted by the numeral 0 0 0

Place value

- uses knowledge of place value to order numbers represented as numerals within the range of zero to at least 100 100 1 0 0 (e.g. locates the number 21 21 2 1 on a number line between 20 20 2 0 and 22 22 2 2 ; re-orders a set of numerals from least to greatest)
- represents and renames two-digit numbers as counts of tens and ones (e.g. 68 68 6 8 is 6 6 6 tens and 8 8 8 ones, 68 68 6 8 ones, or 60 + 8 60 + 8 6 0 + 8 ; uses physical or virtual materials such as bundles of 10 10 1 0 tooth picks or base 10 10 1 0 blocks)

Numeral recognition and identification

- identifies, names, writes and interprets a numeral from a range of numerals up to 1000 1000 1 0 0 0 (e.g. is shown the numerals 70 , 318 , 576 70, 318, 576 7 0 , 3 1 8 , 5 7 6 and 276 276 2 7 6 and when asked "which is 276 276 2 7 6 ?" identifies 276 276 2 7 6 ; compares the number of kilojoules in different energy drinks by reading the dietary information)

Place value

- orders and flexibly renames three-digit numbers according to their place value (e.g. 247 247 2 4 7 is 2 2 2 hundreds, 4 4 4 tens and 7 7 7 ones or 2 2 2 hundreds and 47 47 4 7 ones or 24 24 2 4 tens and 7 7 7 ones)
- applies an understanding of zero in place value notation when reading and writing numerals that include internal zeros (e.g. says 807 807 8 0 7 as 8 8 8 hundred and 7 7 7 or 80 80 8 0 tens and 7 7 7 ones, not 80 80 8 0 and 7 7 7)

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2A02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9M2A02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- draw conclusions and make choices when completing tasks and identify the reasons for choices made
- draw conclusions and make choices when completing tasks and explain the reasons for choices made
- draw conclusions and make choices when completing tasks, using observation and prior knowledge to provide reasons and construct arguments for choices made

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2A02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- consider alternatives by suggesting a different way to approach a given task or problem
- consider alternatives and explore different or creative ways to approach a task or problem
- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option

Snapshot – Put ideas into action

Critical and Creative Thinking: Generating: Put ideas into action

Content description

AC9M2A02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- put ideas into action through trial-and-error experiences
- put ideas into action by experimenting with options and predicting possible results
- put ideas into action by predicting an outcome, trialling options and assessing their effectiveness

Snapshot – Number and place value

Numeracy: Number sense and algebra: Number and place value

Content description

AC9M2A02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Numeral recognition and identification

- identifies, names, writes and interprets numerals up to 20 20 2 0 (e.g. when shown the numerals 4 , 17 , 9 4 , 17 , 9 4 , 1 7 , 9 and 16 16 1 6 and asked, "which is 16 16 1 6 ?", points to the numeral 16 16 1 6 or when shown the numeral 17 17 1 7 says its correct name; when role-playing simple money transactions, counts out 9 9 9 one-dollar coins to pay for an item that costs \$ 9 \ \$9 \$ 9
- identifies and uses the 1 – 9 1–9 1 – 9 repeating sequence in the writing of teen numerals
- identifies a whole quantity as the result of recognising smaller quantities up to 20 20 2 0 (e.g. uses part-part-whole knowledge of numbers to solve problems)

Developing place value

- orders numbers from 1 – 20 1–20 1 – 2 0 (e.g. determines the largest number from a group of numbers in the range from one to 20 20 2 0 ; students are allocated a number between one and 20 20 2 0 and asked to arrange themselves in numerical order)
- represents and describes teen numbers as 10 10 1 0 and some more (e.g. 16 16 1 6 is 10 10 1 0 and

6 6 6 more; uses ten-frames to represent teen numbers)

Numeral recognition and identification

- identifies, names, writes and interprets numerals up to and beyond 100 100 1 0 0 (e.g. is shown the numerals 70 , 38 , 56 70, 38, 56 7 0 , 3 8 , 5 6 and 26 26 2 6 and when asked "which is 38 38 3 8 ?", identifies the numeral 38 38 3 8 ; writes 18 , 81 18, 81 1 8 , 8 1 and 108 108 1 0 8 with the digits in the correct position; compares the class sizes in a particular year level to determine which class has the greatest number of students)
- identifies the 1 – 9 1-9 1 – 9 repeating sequence of digits, both in and between the decade numerals to order numbers and to predict the number that comes before or after another number (e.g. uses hundreds charts or vertical number lists)
- identifies zero as both a number and a placeholder for reading and writing larger numerals, denoted by the numeral 0 0 0

Place value

- uses knowledge of place value to order numbers represented as numerals within the range of zero to at least 100 100 1 0 0 (e.g. locates the number 21 21 2 1 on a number line between 20 20 2 0 and 22 22 2 2 ; re-orders a set of numerals from least to greatest)
- represents and renames two-digit numbers as counts of tens and ones (e.g. 68 68 6 8 is 6 6 6 tens and 8 8 8 ones, 68 68 6 8 ones, or 60 + 8 60 + 8 6 0 + 8 ; uses physical or virtual materials such as bundles of 10 10 1 0 tooth picks or base 10 10 1 0 blocks)

Numeral recognition and identification

- identifies, names, writes and interprets a numeral from a range of numerals up to 1000 1000 1 0 0 0 (e.g. is shown the numerals 70 , 318 , 576 70, 318, 576 7 0 , 3 1 8 , 5 7 6 and 276 276 2 7 6 and when asked "which is 276 276 2 7 6 ?" identifies 276 276 2 7 6 ; compares the number of kilojoules in different energy drinks by reading the dietary information)

Place value

- orders and flexibly renames three-digit numbers according to their place value (e.g. 247 247 2 4 7 is 2 2 2 hundreds, 4 4 4 tens and 7 7 7 ones or 2 2 2 hundreds and 47 47 4 7 ones or 24 24 2 4 tens and 7 7 7 ones)
- applies an understanding of zero in place value notation when reading and writing numerals that include internal zeros (e.g. says 807 807 8 0 7 as 8 8 8 hundred and 7 7 7 or 80 80 8 0 tens and 7 7 7 ones, not 80 80 8 0 and 7 7 7)

Resource – WS01 - Fractions

By the end of Year 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. They describe and continue patterns that increase and decrease additively by a constant amount and identify missing elements in the pattern. Students recall and demonstrate proficiency with addition and subtraction facts within 20 and multiplication facts for twos.

They use uniform informal units to measure and compare shapes and objects.■Students 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.■They compare and classify shapes, describing features using formal spatial terms.■Students locate and identify positions of features in two-dimensional representations and move position by following directions and pathways.

They use a range of methods to collect, record, represent and interpret categorical data in response to questions.

AC9M2N03

recognise and describe one-half as one of 2 equal parts of a whole and connect halves, quarters and eighths through repeated halving

AC9M2A02

recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts

AC9M2M02

identify common uses and represent halves, quarters and eighths in relation to shapes, objects and events

Resource – WS02 - Trick or treat

By the end of Year 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. ■ They describe and continue patterns that increase and decrease additively by a constant amount and identify missing elements in the pattern. Students recall and demonstrate proficiency with addition and subtraction facts within 20 and multiplication facts for twos. They use uniform informal units to measure and compare shapes and objects. ■ Students 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. ■ They compare and classify shapes, describing features using formal spatial terms. ■ Students locate and identify positions of features in two-dimensional representations and move position by following directions and pathways. They use a range of methods to collect, record, represent and interpret categorical data in response to questions.

AC9M2N02

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

AC9M2N04

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

AC9M2A02

recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts

AC9M2A03

recall and demonstrate proficiency with for twos; extend and apply facts to develop the related using doubling and halving

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Elaborations

- recognising and relating terms such as double, twice and multiply by 2 2 2 , halve and divide by 2 2 2 using physical and ; for example, colouring numbers on a hundreds chart to represent doubles and use to recognise halves; recognising the doubling pattern and applying to find related facts such as for 8 8 8 twos think 2 2 2 eights
- doubling and halving collections to practise and develop fluency with multiplication and for twos leading to recall of these facts
- establishing an understanding of doubles and near doubles using physical or virtual manipulatives; for example, using manipulatives to establish that doubling 5 5 5 gives you 10 10 1 0 then extending this doubling fact to respond to the question, “How can you use this fact to double 6 6 6 or double 4 4 4 ?”
- develop fluency with doubling and halving numbers within 20 20 2 0 using physical or and playing doubling and halving games; for example, using a physical or virtual dice and choosing whether to double or halve to reach a target number

Students learn to:

recall and demonstrate proficiency with multiplication facts for twos; extend and apply multiplication facts for twos to multiplication facts for fours; develop the related division facts using doubling and halving

(AC9M2A03)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Analysing

- Interpret concepts and problems

Number sense and algebra

- Multiplicative strategies

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional.

Analysing

- Interpret concepts and problems

Analysing

- Interpret concepts and problems

Generating

- Consider alternatives

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2A03

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Multiplicative strategies

Numeracy: Number sense and algebra: Multiplicative strategies

Content description

AC9M2A03

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Figurative (imagined units)

- uses perceptual markers to represent concealed quantities of equal amounts to determine the total number of items (e.g. to count how many whiteboard markers are in 4 4 4 packs, knows they come in packs of 5 5 5 and counts the number of markers as 5 , 10 , 15 , 20 5, 10, 15, 20 5 , 1 0 , 1 5 , 2 0)

Repeated abstract composite units

- uses composite units in repeated addition using the unit a specified number of times (e.g. interprets " 4 4 4 lots of 3 3 3 " additively and calculates $3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3$ answering " 12 12 1 2 ")
- uses composite units in repeated subtraction using the unit a specified number of times (e.g. when asked "how many groups of 4 4 4 can be formed from our class of 24 24 2 4 ?", repeatedly takes away 4 4 4 from 24 24 2 4 and counts the number of times this can be done. Says " 20 , 16 , 12 , 8 , 4 20, 16, 12, 8, 4 2 0 , 1 6 , 1 2 , 8 , 4 and zero so we can form 6 6 6 groups of 4 4 4 ")

Coordinating composite units

- identifies and represents multiplication in various ways and solves simple multiplicative problems using these representations (e.g. represents multiplication as equal groups and arrays)
- identifies and represents division in various ways such as sharing division or grouping division (e.g. to share a carton of 12 12 1 2 eggs equally between 4 4 4 people, draws 12 12 1 2 dots and

circles 3 3 3 groups of 4 4 4 with 3 3 3 in each share)

- identifies and represents multiplication and division abstractly using the symbols \times and \div (e.g. represents 3 3 3 groups of 4 4 4 as 3×4 ; uses $9 \div 3$ to represent 9 9 9 pieces of fruit being equally shared by 3 3 3 people)

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2A03

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2A03

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2A03

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- consider alternatives by suggesting a different way to approach a given task or problem
- consider alternatives and explore different or creative ways to approach a task or problem
- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option

AC9M2M01

and compare based on length, and using appropriate uniform and smaller for accuracy when necessary

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-

Elaborations

- choosing suitable to the length of a of ; justifying their choice of a longer unit to things that are long, such as the width of a room, and a shorter unit to shorter things or when more accuracy is needed
- comparing the of several containers using sand and such as a spoon or cup, to say which container will hold the most and how much more it will hold; recording the results, writing an explanation of their measurement process, including using smaller to be more accurate, and justifying the result
- using balance to compare the of several , selecting an appropriate informal unit; the number of to determine which is heavier and how much heavier; explaining why the chosen need to be the same
- recognising that the same informal unit needs to be used when measuring; for example, demonstrating and discussing why using different shoe lengths to the same distance could result in the being different; discussing why a smaller sized informal unit may result in a larger number of compared to a larger informal unit
- investigating First Nations Australians' use of body parts, such as hands, as uniform of measurement used to and compare ; for example, in the manufacturing of for a particular purpose
- investigating and comparing measurable that are interpreted by First Nations Australians to understand animal behaviour such as the length, width and depth of animal tracks

Students learn to:

measure and compare objects based on length, capacity and mass using appropriate units and smaller units for accuracy when necessary

(AC9M2M01)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Analysing

- Interpret concepts and problems
- Draw conclusions and provide reasons

Inquiring

- Identify, process and evaluate information

Measurement and geometry

- Understanding units of measurement

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Analysing

- Interpret concepts and problems
- Draw conclusions and provide reasons

Inquiring

- Identify, process and evaluate information

Writing

- Creating texts

Analysing

- Interpret concepts and problems
- Draw conclusions and provide reasons

Statistics and probability

- Interpreting and representing data

Analysing

- Interpret concepts and problems
- Draw conclusions and provide reasons

Inquiring

- Identify, process and evaluate information

Analysing

- Interpret concepts and problems
- Draw conclusions and provide reasons

Inquiring

- Identify, process and evaluate information

Culture

- First Nations Australians' ways of life reflect unique ways of being, knowing, thinking and doing.

Inquiring

- Identify, process and evaluate information

Culture

- First Nations Australians' ways of life reflect unique ways of being, knowing, thinking and doing.

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9S2I03

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- draw conclusions and make choices when completing tasks and identify the reasons for choices made
- draw conclusions and make choices when completing tasks and explain the reasons for choices made
- draw conclusions and make choices when completing tasks, using observation and prior knowledge to provide reasons and construct arguments for choices made

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Understanding units of measurement

Numeracy: Measurement and geometry: Understanding units of measurement

Content description

AC9M2M01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Comparing and ordering objects

- uses direct comparison to compare 2 2 2 objects and indicates whether they are the same or different based on attributes such as length, height, mass or capacity (e.g. compares the length of 2 2 2 objects by aligning the ends; pours sand or water from one container to another to decide which holds more; hefts to decide which is heavier)
- uses comparative language to compare 2 2 2 objects (e.g. states which is shorter or longer, lighter or heavier)
- orders 3 3 3 or more objects by comparing pairs of objects (e.g. decides where to stand in a line ordered by height by comparing their height to others directly)

Using informal units of measurement

- measures an attribute by choosing and using multiple identical, informal units (e.g. measures the distance from one goal post to the other by counting out footsteps; chooses to count out loud to 30 30 30 to give enough time for people to hide in a game of hide and seek)
- selects the appropriate size and dimensions of an informal unit to measure and compare attributes (e.g. chooses a linear unit such as a pencil to measure length, or a bucket to measure the capacity of a large container)
- chooses and uses appropriate uniform informal units to measure length and area without gaps or overlaps (e.g. uses the same sized paper clips to measure the length of a line; uses tiles, rather

than counters, to measure the area of a sheet of paper because the tiles fit together without gaps)

- uses multiple uniform informal units to measure and make direct comparisons between the mass or capacity of objects (e.g. uses a balance scale and a number of same-sized marbles to compare mass; uses a number of cups of water or buckets of sand to measure capacity)
- counts the individual uniform units used by ones to compare measurements (e.g. counts the number of matchsticks and says, "I used 4 4 4 matchsticks to measure the width of my book and the shelf is 5 5 5 matchsticks wide, so I know my book will fit")

Estimating measurements

- estimates a measurement based on a number of uniform informal units (e.g. estimates the measurement as "about 4 4 4 handspans" or it takes about 2 2 2 buckets of water)
- checks an estimate using informal units to compare to predicted measurement

Repeating a single informal unit to measure

- measures length using a single informal unit repeatedly (e.g. uses one paper clip to measure the length of a line, making the first unit, marking its place, then moving the paper clip along the line and repeating this process)
- measures the area of a surface using an informal single unit of measure repeatedly (e.g. uses a sheet of paper to measure the area of a desktop)
- measures an attribute by counting the number of informal units used

Estimating measurements

- uses familiar household items as benchmarks when estimating, length, mass and capacity (e.g. compares capacities based on knowing the capacity of a bottle of water such as, "it will take about 3 3 3 bottles to fill")

Describing turns

- describes a turn in both direction and the amount of turn (e.g. a quarter turn to the right, a full turn on the spot)

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- draw conclusions and make choices when completing tasks and identify the reasons for choices made
- draw conclusions and make choices when completing tasks and explain the reasons for choices made
- draw conclusions and make choices when completing tasks, using observation and prior knowledge to provide reasons and construct arguments for choices made

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources

- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Creating texts

Literacy: Writing: Creating texts

Content description

AC9M2M01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Crafting ideas

- expresses an idea drawing on familiar experiences and topics, using attempted words and pictures
- assigns message to own texts "reading back" own attempts at writing
- writes attempted words in a logical sequence

Text forms and features

- writes a few words correctly
- writes from left to right
- writes letters to represent words (see Phonic knowledge and word recognition)

Vocabulary

- writes own name and other personally significant words (e.g. family names, dog, house)

Crafting ideas

- writes ideas in sentence fragments or a simple sentence (e.g. "I am 6.")
- explains the purpose and audience of familiar imaginative and informative texts
- creates short texts in different forms such as a simple recount
- combines visuals with written text where appropriate
- reads back own writing word by word
- talks about own text and describes subject matter and images

Text forms and features

- writes some appropriate letter combinations to represent less familiar words (see Spelling and Phonic knowledge and word recognition)
- writes with noun-verb agreement (e.g. "I am"), articles (e.g. "a man") and personal pronouns (e.g. "my mum") (see Grammar)
- writes from left to right using spaces between attempted words
- uses basic noun groups/phrases (e.g. "my house") (see Grammar)
- uses some sentence punctuation (e.g. capital letters at the beginning of a text)

Vocabulary

- writes simple familiar words (e.g. "saw", "food", "they")
- includes some learning area vocabulary in own texts (e.g. "season")
- uses taught high-frequency words

Crafting ideas

- creates a text including 2 or 3 related ideas for a familiar purpose such as recounting an event, telling a story, expressing thoughts, feelings and opinions
- includes beginning structural features (e.g. statement of an opinion, a heading, description of an event linked to time and place)
- creates texts for learning area purposes (e.g. labelling a simple diagram, ordering events on a timeline)

Text forms and features

- writes simple sentences made up of basic verb groups, noun groups and phrases (e.g. "We visited my aunty's house last week.")
- writes compound sentences using common conjunctions (e.g. "My house is big but the garden is small.")
- makes plausible attempts to write unfamiliar words phonetically (e.g. "enjn" for "engine") (see Spelling)
- uses capital letters correctly to indicate proper nouns (see Punctuation)

- uses capital letters at the start and full stops at the end of sentences (see Punctuation)
- spells some high-frequency words correctly (see Spelling)
- uses appropriate key words to represent simple concepts (e.g. "aunty", "sister", "cousin" in a text about family)

Vocabulary

- uses adjectives to add meaning by describing qualities or features (e.g. "small", "long", "red") (see Grammar)
- uses words in own writing adopted from other writers
- uses simple words to add clarity to ideas (e.g. modifying and qualifying words such as "very")

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- draw conclusions and make choices when completing tasks and identify the reasons for choices made
- draw conclusions and make choices when completing tasks and explain the reasons for choices made
- draw conclusions and make choices when completing tasks, using observation and prior knowledge to provide reasons and construct arguments for choices made

Snapshot – Interpreting and representing data

Numeracy: Statistics and probability: Interpreting and representing data

Content description

AC9M2M01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Basic one-to-one data displays

- poses questions that could be investigated from a simple numerical or categorical data set (e.g. number of family members, types of pets, where people live)
- displays and describes one variable data in lists or tables
- communicates information through text, picture graphs and tables using numbers and symbols (e.g. creates picture graphs to display one-variable data)
- responds to questions and interprets general observations made about data represented in simple one-to-one data displays (e.g. responds to questions about the information represented in a simple picture graph that uses a one-to-one representation)

Collecting, displaying and interpreting categorical data

- designs survey questions to collect categorical data (e.g. creates a suite of survey questions to plan the end of year class party)
- collects, records and displays one-variable data in variety of ways such as tables, charts, plots and graphs using the appropriate digital tools (e.g. uses a spreadsheet to record data collected in a class survey and generates a column graph to display the results)
- displays and interprets categorical data in one-to-many data displays
- interprets and represents categorical data in simple displays such as bar and column graphs, pie charts, models, maps, colour wheels, and pictorial timelines, and makes simple inferences from such displays

- makes comparisons from categorical data displays using relative heights from a common baseline (e.g. compares the heights of the columns in a simple column graph to determine the tallest and recognises this as the most frequent response)

Collecting, displaying and interpreting numerical data

- collects and records discrete numerical data using an appropriate method for recording (e.g. uses a frequency table to record the experimental results for rolling a dice; records sample measurements taken during a science investigation)
- constructs graphical representations of numerical data and explains the difference between continuous and discrete data (e.g. explains that measurements such as length, mass and temperature are continuous data whereas a count such as the number of people in a queue is discrete)
- explains how data displays can be misleading (e.g. whether a scale should start at zero; not using uniform intervals on the axes)
- interprets visual representations of data displayed using a multi-unit scale, reading values between the marked units and describing any variation and trends in the data

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- draw conclusions and make choices when completing tasks and identify the reasons for choices made
- draw conclusions and make choices when completing tasks and explain the reasons for choices made
- draw conclusions and make choices when completing tasks, using observation and prior knowledge to provide reasons and construct arguments for choices made

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- draw conclusions and make choices when completing tasks and identify the reasons for choices made
- draw conclusions and make choices when completing tasks and explain the reasons for choices made
- draw conclusions and make choices when completing tasks, using observation and prior knowledge to provide reasons and construct arguments for choices made

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
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- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2M01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

AC9M2M02

identify common uses and represent halves, quarters and eighths in to , and

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Elaborations

- demonstrating how food items can be cut in halves, quarters or eighths; for example, cutting pizzas, slices, cakes or sandwiches into equal parts by halving, then halving again to form quarters and eighths, ensuring that the parts are equal
- investigating cup and spoon used in cooking and discussing what half or quarter of a cup or tablespoon , and using sand or water to compare these to the full cup and tablespoon
- demonstrating and using halves and quarters in folding activities; for example, folding paper in half and quarters and ensuring that the pieces are the same size
- recognising that halves and quarters can be used to describe lengths, positions and distances; for

example, describing the halfway in a race or instructing someone to stand halfway between the 2 2 2 chairs

- discussing that halves and quarters are used to describe of time in sporting , of time and what it ; for example, how the sirens used during an Australian Rules Football game represent quarters and half time during the game; recognising and using half or quarter of an hour to describe a of time

Students learn to:

identify common uses and represent halves, quarters and eighths in relation to shape and events

(AC9M2M02)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Number sense and algebra

- Interpreting fractions

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Measurement and geometry

- Understanding units of measurement

Measurement and geometry

- Understanding units of measurement

Measurement and geometry

- Understanding units of measurement

Measurement and geometry

- Measuring time

Resources

Work Samples

WS01 - Fractions

Snapshot – Interpreting fractions

Numeracy: Number sense and algebra: Interpreting fractions

Content description

AC9M2M02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Creating halves

- demonstrates that dividing a whole into 2 2 2 parts can create equal or unequal parts
- identifies the part and the whole in representations of one-half (e.g. joins 2 2 2 equal pieces back together to form the whole shape and can identify the pieces as equal parts of the whole shape)
- creates equal halves of collections and physical and virtual materials using all of the whole (e.g. folds a paper strip in half to make equal pieces by aligning the edges; cuts a sandwich in half diagonally; partitions a collection into 2 2 2 equal groups to represent halving)

Repeated halving

- makes quarters and eighths of objects and collections by repeated halving (e.g. locates halfway on a strip of paper then halves each half; finds a quarter of an orange by halving and then halving again; 8 8 8 counters halved and then halved again into 4 4 4 groups of 2 2 2)
- identifies the part and the whole in representations of halves, quarters and eighths (e.g. identifies the fractional parts that make up the whole using fraction puzzles)
- represents known fractions using various fraction models (e.g. discrete collections, continuous linear and continuous area)

Repeating fractional parts

- accumulates fractional parts (e.g. knows that two-quarters is inclusive of one-quarter and twice one-quarter, not just the second quarter)

- checks the equality of parts by iterating one part to form the whole (e.g. when given a representation of one-quarter of a length and asked, "what fraction is this of the whole length?", uses the length as a counting unit to make the whole)
- identifies fractions in measurement situations and solves problems using halves, quarters and eighths (e.g. quarters in an AFL match; uses two $\frac{1}{2}$ cup measures in place of a single one-cup measure)
- demonstrates that fractions can be written symbolically and interprets using part-whole knowledge (e.g. interprets $\frac{3}{4}$ to mean 3 one-quarters or 3 lots of $\frac{1}{4}$)

Snapshot – Understanding units of measurement

Numeracy: Measurement and geometry: Understanding units of measurement

Content description

AC9M2M02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Comparing and ordering objects

- uses direct comparison to compare 2 objects and indicates whether they are the same or different based on attributes such as length, height, mass or capacity (e.g. compares the length of 2 objects by aligning the ends; pours sand or water from one container to another to decide which holds more; hefts to decide which is heavier)
- uses comparative language to compare 2 objects (e.g. states which is shorter or longer, lighter or heavier)
- orders 3 or more objects by comparing pairs of objects (e.g. decides where to stand in a line ordered by height by comparing their height to others directly)

Using informal units of measurement

- measures an attribute by choosing and using multiple identical, informal units (e.g. measures the distance from one goal post to the other by counting out footsteps; chooses to count out loud to 30 to give enough time for people to hide in a game of hide and seek)
- selects the appropriate size and dimensions of an informal unit to measure and compare attributes (e.g. chooses a linear unit such as a pencil to measure length, or a bucket to measure the capacity of a large container)
- chooses and uses appropriate uniform informal units to measure length and area without gaps or overlaps (e.g. uses the same sized paper clips to measure the length of a line; uses tiles, rather than counters, to measure the area of a sheet of paper because the tiles fit together without gaps)
- uses multiple uniform informal units to measure and make direct comparisons between the mass or capacity of objects (e.g. uses a balance scale and a number of same-sized marbles to compare mass; uses a number of cups of water or buckets of sand to measure capacity)
- counts the individual uniform units used by ones to compare measurements (e.g. counts the number of matchsticks and says, "I used 4 matchsticks to measure the width of my book and the shelf is 5 matchsticks wide, so I know my book will fit")

Estimating measurements

- estimates a measurement based on a number of uniform informal units (e.g. estimates the measurement as "about 4 handspans" or it takes about 2 buckets of water)
- checks an estimate using informal units to compare to predicted measurement

Repeating a single informal unit to measure

- measures length using a single informal unit repeatedly (e.g. uses one paper clip to measure the length of a line, making the first unit, marking its place, then moving the paper clip along the line and repeating this process)
- measures the area of a surface using an informal single unit of measure repeatedly (e.g. uses a sheet of paper to measure the area of a desktop)
- measures an attribute by counting the number of informal units used

Estimating measurements

- uses familiar household items as benchmarks when estimating, length, mass and capacity (e.g. compares capacities based on knowing the capacity of a bottle of water such as, "it will take about 3 bottles to fill")

Describing turns

- describes a turn in both direction and the amount of turn (e.g. a quarter turn to the right, a full turn on the spot)

Snapshot – Understanding units of measurement

Numeracy: Measurement and geometry: Understanding units of measurement

Content description

AC9M2M02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Comparing and ordering objects

- uses direct comparison to compare 2 2 2 objects and indicates whether they are the same or different based on attributes such as length, height, mass or capacity (e.g. compares the length of 2 2 2 objects by aligning the ends; pours sand or water from one container to another to decide which holds more; hefts to decide which is heavier)
- uses comparative language to compare 2 2 2 objects (e.g. states which is shorter or longer, lighter or heavier)
- orders 3 3 3 or more objects by comparing pairs of objects (e.g. decides where to stand in a line ordered by height by comparing their height to others directly)

Using informal units of measurement

- measures an attribute by choosing and using multiple identical, informal units (e.g. measures the distance from one goal post to the other by counting out footsteps; chooses to count out loud to 30 30 30 to give enough time for people to hide in a game of hide and seek)
- selects the appropriate size and dimensions of an informal unit to measure and compare attributes (e.g. chooses a linear unit such as a pencil to measure length, or a bucket to measure the capacity of a large container)
- chooses and uses appropriate uniform informal units to measure length and area without gaps or overlaps (e.g. uses the same sized paper clips to measure the length of a line; uses tiles, rather than counters, to measure the area of a sheet of paper because the tiles fit together without gaps)
- uses multiple uniform informal units to measure and make direct comparisons between the mass or capacity of objects (e.g. uses a balance scale and a number of same-sized marbles to compare mass; uses a number of cups of water or buckets of sand to measure capacity)
- counts the individual uniform units used by ones to compare measurements (e.g. counts the number of matchsticks and says, "I used 4 4 4 matchsticks to measure the width of my book and the shelf is 5 5 5 matchsticks wide, so I know my book will fit")

Estimating measurements

- estimates a measurement based on a number of uniform informal units (e.g. estimates the measurement as "about 4 4 4 handspans" or it takes about 2 2 2 buckets of water)
- checks an estimate using informal units to compare to predicted measurement

Repeating a single informal unit to measure

- measures length using a single informal unit repeatedly (e.g. uses one paper clip to measure the length of a line, making the first unit, marking its place, then moving the paper clip along the line and repeating this process)
- measures the area of a surface using an informal single unit of measure repeatedly (e.g. uses a sheet of paper to measure the area of a desktop)
- measures an attribute by counting the number of informal units used

Estimating measurements

- uses familiar household items as benchmarks when estimating, length, mass and capacity (e.g. compares capacities based on knowing the capacity of a bottle of water such as, "it will take about 3 3 3 bottles to fill")

Describing turns

- describes a turn in both direction and the amount of turn (e.g. a quarter turn to the right, a full turn on the spot)

Snapshot – Understanding units of measurement

Numeracy: Measurement and geometry: Understanding units of measurement

Content description

AC9M2M02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Comparing and ordering objects

- uses direct comparison to compare 2 2 2 objects and indicates whether they are the same or different based on attributes such as length, height, mass or capacity (e.g. compares the length of 2 2 2 objects by aligning the ends; pours sand or water from one container to another to decide which holds more; hefts to decide which is heavier)
- uses comparative language to compare 2 2 2 objects (e.g. states which is shorter or longer, lighter or heavier)
- orders 3 3 3 or more objects by comparing pairs of objects (e.g. decides where to stand in a line ordered by height by comparing their height to others directly)

Using informal units of measurement

- measures an attribute by choosing and using multiple identical, informal units (e.g. measures the distance from one goal post to the other by counting out footsteps; chooses to count out loud to 30 30 30 to give enough time for people to hide in a game of hide and seek)
- selects the appropriate size and dimensions of an informal unit to measure and compare attributes (e.g. chooses a linear unit such as a pencil to measure length, or a bucket to measure the capacity of a large container)
- chooses and uses appropriate uniform informal units to measure length and area without gaps or overlaps (e.g. uses the same sized paper clips to measure the length of a line; uses tiles, rather than counters, to measure the area of a sheet of paper because the tiles fit together without gaps)
- uses multiple uniform informal units to measure and make direct comparisons between the mass or capacity of objects (e.g. uses a balance scale and a number of same-sized marbles to compare mass; uses a number of cups of water or buckets of sand to measure capacity)
- counts the individual uniform units used by ones to compare measurements (e.g. counts the number of matchsticks and says, "I used 4 4 4 matchsticks to measure the width of my book and the shelf is 5 5 5 matchsticks wide, so I know my book will fit")

Estimating measurements

- estimates a measurement based on a number of uniform informal units (e.g. estimates the measurement as "about 4 4 4 handspans" or it takes about 2 2 2 buckets of water)
- checks an estimate using informal units to compare to predicted measurement

Repeating a single informal unit to measure

- measures length using a single informal unit repeatedly (e.g. uses one paper clip to measure the length of a line, making the first unit, marking its place, then moving the paper clip along the line and repeating this process)
- measures the area of a surface using an informal single unit of measure repeatedly (e.g. uses a sheet of paper to measure the area of a desktop)
- measures an attribute by counting the number of informal units used

Estimating measurements

- uses familiar household items as benchmarks when estimating, length, mass and capacity (e.g. compares capacities based on knowing the capacity of a bottle of water such as, "it will take about 3 3 3 bottles to fill")

Describing turns

- describes a turn in both direction and the amount of turn (e.g. a quarter turn to the right, a full turn on the spot)

Snapshot – Measuring time

Numeracy: Measurement and geometry: Measuring time

Content description

AC9M2M02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Sequencing time

- uses the language of time to describe events in relation to past, present and future (e.g. "yesterday I...", "today I ...", "tomorrow I will ...", "next week I will ...")
- applies an understanding of passage of time to sequence events using everyday language (e.g. "I play sport on the weekend and have training this afternoon"; "the bell is going to go soon"; "we have cooking tomorrow")
- uses direct comparison to compare time duration of 2 2 2 actions, knowing they must begin the actions at the same time (e.g. who can put their shoes on in the shortest time)
- measures time duration by counting and using informal units (e.g. counts to 30 30 3 0 while children hide when playing hide and seek)

Units of time

- uses and justifies the appropriate unit of time to describe the duration of events (e.g. uses minutes to describe time taken to clean teeth; uses hours to describe the duration of a long-distance car trip)
- identifies that the clockface is a circle subdivided into 12 12 1 2 parts and uses these to allocate hour markers
- identifies that hour markers on a clock can also represent quarter-hour and half-hour marks and shows that there is a minute hand and an hour hand on a clock
- identifies the direction of clockwise and anticlockwise relating it to the hands of the clock
- reads time on analog clocks to the hour, half-hour and quarter-hour
- names and orders days of the week and months of the year
- uses a calendar to identify the date and determine the number of days in each month

Measuring time

- uses standard instruments and units to describe and measure time to hours, minutes and seconds (e.g. measures time using a stopwatch; sets a timer on an appliance; estimates the time it would take to walk to the other side of the school oval and uses minutes as the unit of measurement)
- reads and interprets different representations of time (e.g. reads the time on an analog clock, watch or digital clock; uses lap times on a stop watch or fitness app)
- identifies the minute hand movement on an analog clock and the 60 60 6 0 -minute markings, interpreting the numbers as representing lots of 5 5 5 (e.g. interprets the time on an analog clock to read 7 7 7 : 40 40 4 0 , by reading the hour hand and the minute hand and explaining how they are related)
- uses smaller units of time such as seconds to record duration of events (e.g. records reaction times in sports or in relation to safe driving)
- uses a calendar to calculate time intervals in days and weeks, bridging months (e.g. develops fitness plans, tracks growth and development progress and sets realistic personal and health goals using a calendar)

Resource – WS01 - Fractions

By the end of Year 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. They describe and continue patterns that increase and decrease additively by a constant amount and identify missing elements in the pattern. Students recall and demonstrate proficiency with addition and subtraction facts within 20 and multiplication facts for twos.

They use uniform informal units to measure and compare shapes and objects.■Students 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.■They compare and classify shapes, describing features using formal spatial terms.■Students locate and identify positions of features in two-dimensional representations and move position by following directions and pathways.

They use a range of methods to collect, record, represent and interpret categorical data in response

to questions.

AC9M2N03

recognise and describe one-half as one of 2 equal parts of a whole and connect halves, quarters and eighths through repeated halving

AC9M2A02

recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts

AC9M2M02

identify common uses and represent halves, quarters and eighths in relation to shapes, objects and events

AC9M2M03

identify the date and determine the number of days between using calendars

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Elaborations

- using calendars to locate specific dates and identify what day it is, to determine the date 2 2 2 weeks prior to or after a given date
- creating a class calendar to enter specific dates relevant to the class; for example, students' birthdays, school assemblies, sports carnivals or class excursions
- using addition and a calendar to model and solve the problem "How many days there are in left in this year?" by identifying the number days of left in this month and in each of the remaining months, and using addition to model and solve the problem
- identifying and locating specific days or dates on a calendar; for example, school holidays, sports days, ANZAC Day, Easter, Diwali or Ramadan

Students learn to:

identify the date and determine the number of days between events using calendars

(AC9M2M03)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Measurement and geometry

- Measuring time

Number sense and algebra

- Counting processes

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Analysing

- Interpret concepts and problems

Number sense and algebra

- Additive strategies

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9HS2S02

Resources

Work Samples

WS04 - Measuring time

Snapshot – Measuring time

Numeracy: Measurement and geometry: Measuring time

Content description

AC9M2M03

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Sequencing time

- uses the language of time to describe events in relation to past, present and future (e.g. "yesterday I...", "today I...", "tomorrow I will...", "next week I will...")
- applies an understanding of passage of time to sequence events using everyday language (e.g. "I play sport on the weekend and have training this afternoon"; "the bell is going to go soon"; "we have cooking tomorrow")
- uses direct comparison to compare time duration of 2 2 2 actions, knowing they must begin the actions at the same time (e.g. who can put their shoes on in the shortest time)
- measures time duration by counting and using informal units (e.g. counts to 30 30 30 while children hide when playing hide and seek)

Units of time

- uses and justifies the appropriate unit of time to describe the duration of events (e.g. uses minutes to describe time taken to clean teeth; uses hours to describe the duration of a long-distance car trip)
- identifies that the clockface is a circle subdivided into 12 12 12 parts and uses these to allocate hour markers
- identifies that hour markers on a clock can also represent quarter-hour and half-hour marks and shows that there is a minute hand and an hour hand on a clock
- identifies the direction of clockwise and anticlockwise relating it to the hands of the clock
- reads time on analog clocks to the hour, half-hour and quarter-hour
- names and orders days of the week and months of the year
- uses a calendar to identify the date and determine the number of days in each month

Measuring time

- uses standard instruments and units to describe and measure time to hours, minutes and seconds (e.g. measures time using a stopwatch; sets a timer on an appliance; estimates the time it would take to walk to the other side of the school oval and uses minutes as the unit of measurement)
- reads and interprets different representations of time (e.g. reads the time on an analog clock, watch or digital clock; uses lap times on a stop watch or fitness app)
- identifies the minute hand movement on an analog clock and the 60 60 60 -minute markings, interpreting the numbers as representing lots of 5 5 5 (e.g. interprets the time on an analog clock to read 7 7 7 : 40 40 40 , by reading the hour hand and the minute hand and explaining how they are related)
- uses smaller units of time such as seconds to record duration of events (e.g. records reaction times in sports or in relation to safe driving)
- uses a calendar to calculate time intervals in days and weeks, bridging months (e.g. develops fitness plans, tracks growth and development progress and sets realistic personal and health goals using a calendar)

Snapshot – Counting processes

Numeracy: Number sense and algebra: Counting processes

Content description

AC9M2M03

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Counting sequences

- uses knowledge of the counting sequence to determine the next number or previous number from any starting point within the range 1 – 100 1–100 1 – 100

Perceptual counting

- matches known numerals to collections of up to 20 20 20 , counting items using a one-to-one correspondence
- uses zero to denote when no objects are present (e.g. when asked "how many cards have you got?" and has no cards left, says "zero")

- counts objects in a collection independent of the order, appearance or arrangement (e.g. understands that counting 7 7 7 people in a row from left to right is the same as counting them from right to left)

Counting sequences

- continues counting from any number forwards and backwards beyond 100 100 1 0 0 using knowledge of place value
- counts in sequence by twos and fives starting at zero (e.g. counts items using number rhymes " 2 , 4 , 6 , 8 2 , 4 , 6 , 8 2 , 4 , 6 , 8 Mary's at the cottage gate ..."; skip counts in fives as " 5 , 10 , 15 , 20 5 , 10 , 15 , 20 5 , 1 0 , 1 5 , 2 0 ")
- counts in sequence forwards and backwards by tens on the decade up to 100 100 1 0 0

Perceptual counting

- counts items in groups of twos, fives and tens (e.g. counts a quantity of 10 10 1 0 -cent pieces as 10 , 20 , 30 10, 20, 30 1 0 , 2 0 , 3 0 ... to give the total value of the coins; counts the number of students by twos when lined up in pairs)

Counting sequences

- counts in sequence forwards and backwards by tens or fives off the decade to 100 100 1 0 0 and by hundreds up to 1000 1000 1 0 0 0 and beyond using knowledge of place value (e.g. 2 , 12 , 22 2 , 12, 22 2 , 1 2 , 2 2 ... or 8 , 13 , 18 , 23 8, 13, 18, 23 8 , 1 3 , 1 8 , 2 3 ; 100 , 200 100, 200 1 0 0 , 2 0 0 ... 1000 1000 1 0 0 0)

Perceptual counting

- counts large quantities in groups or multiples (e.g. groups items into piles of 10 10 1 0 , then counts the piles, adding on the residual to quantify the whole collection)
- estimates the number of items to count to assist with determining group sizes (e.g. decides that counting in twos would not be the most efficient counting strategy based on a quick estimate of the quantity and decides instead to use groups of 10 10 1 0)

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2M03

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Additive strategies

Numeracy: Number sense and algebra: Additive strategies

Content description

AC9M2M03

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Flexible strategies with combinations to 10

- describes subtraction as the difference between numbers rather than taking away using diagrams and a range of representations (e.g. using a number line to represent $8 - 3$ as the difference between 8 8 8 and 3 3 3)
- uses a range of strategies to add or subtract 2 2 2 or more numbers within the range of 1 1 1 - 20 20 2 0 (e.g. bridging to 10 10 1 0 ; near doubles; adding the same to both numbers $7 + 8 = 15$ $7 + 8 = 15$ $7 + 8 = 1 5$ because double 8 8 8 is 16 16 1 6 and 7 7 7 is one less than 8 8 8 ; $8 + 6 = 14$ $8 + 6 = 14$ $8 + 6 = 1 4$ because $8 + 2 = 10$ $8 + 2 = 10$ $8 + 2 = 1 0$ and 4 4 4 more is 14 14 1 4 ; $15 - 8 = 7$ $15 - 8 = 7$ $15 - 8 = 7$ because I can add 2 2 2 to both to give $17 - 10 = 7$ $17 - 10 = 7$ $10 = 7$ $1 7 - 1 0 = 7$)
- uses knowledge of part-part-whole number construction to partition natural numbers into parts to solve addition and subtraction problems (e.g. to solve $6 + 6 = 13$, says " 6 6 6 plus 4 4 4 makes 10 10 1 0 , and 3 3 3 more ... so it's 7 7 7 ")

- represents additive situations using number sentences and part-part-whole diagrams including when different parts or the whole are unknown (e.g. uses the number sentence $8 - 3 = 5$ to represent the problem "I had 8 pencils. I gave 3 to Max. I now have 5 remaining"; matches the number sentence $4 + 4 = 9$ to the problem, "I have 9 cups and only 4 saucers, how many more saucers do I need?")

Flexible strategies with two-digit numbers

- chooses from a range of known strategies to solve additive problems involving two-digit numbers (e.g. uses place value knowledge, known addition facts and part-part-whole number knowledge to solve problems like $24 + 8 + 13$, partitions 8 as 6 and 2, then combines 24 and 6 to rename it as 30 before combining it with 13 to make 43, and then combines the remaining 2 to find 45; adds the same quantity to both numbers $47 - 38 = 49 - 40$);
- identifies that the same combinations and partitions to 10 are repeated within each decade (e.g. knowing that $8 + 2 = 10$, knows $18 + 2 = 20$, $28 + 2 = 30$ etc.)
- identifies addition as associative and commutative and that subtraction is neither
- applies the commutative and associative properties of addition to simplify mental computation (e.g. to calculate $23 + 9 + 7$ adds $23 + 9 = 32$ then $32 + 7 = 39$);
- applies inverse relationship of addition and subtraction to solve problems, including solving problems with digital tools, and uses the inverse relationship to justify an answer (e.g. when solving $23 - 16$ chooses to use addition $16 + ? = 23$ decides to use subtraction and inputs $38 - 16 = 22$);
- represents a wide range of additive problem situations involving two-digit numbers using appropriate addition and subtraction number sentences

Flexible strategies with three-digit numbers and beyond

- uses place value, standard and non-standard partitioning, trading or exchanging of units to mentally add and subtract numbers with 3 or more digits (e.g. to add 250 and 457, partitions 250 into 200 and 50, says 457 plus 200 is 657, plus 50 is 707; to add 184 and 270, partitions into $150 + 34$ and $250 + 20 = 400 + 34 + 20 = 454$);
- chooses and uses strategies including algorithms and technology to efficiently solve additive problems (e.g. develops total costings for ingredients or materials for a task or combines measurements to determine the total amount of materials required)
- uses estimation to determine the reasonableness of the solution to an additive problem (e.g. when asked to add 249 and 437 says "250 + 440 is 690, so 249 + 437 is 686")
- represents a wide range of familiar real-world additive situations involving large numbers as standard number sentences explaining their reasoning

Resource – WS04 - Measuring time

By the end of Year 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. They describe and continue patterns that increase and decrease additively by a constant amount and identify missing elements in the pattern. Students recall and demonstrate proficiency with addition and subtraction facts within 20 and multiplication facts for twos.

They use uniform informal units to measure and compare shapes and objects. Students 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. They compare and classify shapes, describing features using formal spatial

terms. Students locate and identify positions of features in two-dimensional representations and move position by following directions and pathways.

They use a range of methods to collect, record, represent and interpret categorical data in response to questions.

AC9M2M03

identify the date and determine the number of days between events using calendars

AC9M2M04

recognise and read the time represented on an analog clock to the hour, half-hour and quarter-hour

AC9M2M04

recognise and read the time represented on an to the hour, half-hour and quarter-hour

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Elaborations

- creating an from a paper plate, showing the placement of the numbers and the 2 2 2 hands; explaining how long it takes for the 2 2 2 hands to move around the clock face and what time unit each is showing
- recognising and describing the relationship between the movement of the hands on an and the of time it represents; for example, connecting the language of “half past” to when the “big hand” will be at half past the hour and recognising this position as being halfway around its full cycle
- dividing a clockface into halves and quarters, and connecting the subdivisions with telling the time to the half and quarter hour; explaining the meaning of “quarter past” and “quarter to” referring to the hour

Students learn to:

recognise and read the time represented on an analog clock to the hour, half-hour a

(AC9M2M04)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Measurement and geometry

- Measuring time

Number sense and algebra

- Interpreting fractions

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Number sense and algebra

- Interpreting fractions

Measurement and geometry

- Measuring time

Number sense and algebra

- Interpreting fractions

Analysing

- Interpret concepts and problems

Number sense and algebra

- Interpreting fractions

Resources

Work Samples

WS04 - Measuring time

Snapshot – Measuring time

Numeracy: Measurement and geometry: Measuring time

Content description

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Sequencing time

- uses the language of time to describe events in relation to past, present and future (e.g. "yesterday I...", "today I...", "tomorrow I will ...", "next week I will ...")
- applies an understanding of passage of time to sequence events using everyday language (e.g. "I play sport on the weekend and have training this afternoon"; "the bell is going to go soon"; "we have cooking tomorrow")
- uses direct comparison to compare time duration of 2 2 2 actions, knowing they must begin the actions at the same time (e.g. who can put their shoes on in the shortest time)
- measures time duration by counting and using informal units (e.g. counts to 30 30 3 0 while children hide when playing hide and seek)

Units of time

- uses and justifies the appropriate unit of time to describe the duration of events (e.g. uses minutes to describe time taken to clean teeth; uses hours to describe the duration of a long-distance car trip)
- identifies that the clockface is a circle subdivided into 12 12 1 2 parts and uses these to allocate hour markers
- identifies that hour markers on a clock can also represent quarter-hour and half-hour marks and shows that there is a minute hand and an hour hand on a clock
- identifies the direction of clockwise and anticlockwise relating it to the hands of the clock
- reads time on analog clocks to the hour, half-hour and quarter-hour
- names and orders days of the week and months of the year
- uses a calendar to identify the date and determine the number of days in each month

Measuring time

- uses standard instruments and units to describe and measure time to hours, minutes and seconds (e.g. measures time using a stopwatch; sets a timer on an appliance; estimates the time it would take to walk to the other side of the school oval and uses minutes as the unit of measurement)
- reads and interprets different representations of time (e.g. reads the time on an analog clock, watch or digital clock; uses lap times on a stop watch or fitness app)
- identifies the minute hand movement on an analog clock and the 60 60 6 0 -minute markings, interpreting the numbers as representing lots of 5 5 5 (e.g. interprets the time on an analog clock to read 7 7 7 : 40 40 4 0 , by reading the hour hand and the minute hand and explaining how they are related)
- uses smaller units of time such as seconds to record duration of events (e.g. records reaction times in sports or in relation to safe driving)
- uses a calendar to calculate time intervals in days and weeks, bridging months (e.g. develops fitness plans, tracks growth and development progress and sets realistic personal and health goals using a calendar)

Snapshot – Interpreting fractions

Numeracy: Number sense and algebra: Interpreting fractions

Content description

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Repeated halving

- makes quarters and eighths of objects and collections by repeated halving (e.g. locates halfway on a strip of paper then halves each half; finds a quarter of an orange by halving and then halving again; 8 8 8 counters halved and then halved again into 4 4 4 groups of 2 2 2)
- identifies the part and the whole in representations of halves, quarters and eighths (e.g. identifies the fractional parts that make up the whole using fraction puzzles)
- represents known fractions using various fraction models (e.g. discrete collections, continuous

linear and continuous area)

Repeating fractional parts

- accumulates fractional parts (e.g. knows that two-quarters is inclusive of one-quarter and twice one-quarter, not just the second quarter)
- checks the equality of parts by iterating one part to form the whole (e.g. when given a representation of one-quarter of a length and asked, "what fraction is this of the whole length?", uses the length as a counting unit to make the whole)
- identifies fractions in measurement situations and solves problems using halves, quarters and eighths (e.g. quarters in an AFL match; uses two $\frac{1}{2}$ cup measures in place of a single one-cup measure)
- demonstrates that fractions can be written symbolically and interprets using part-whole knowledge (e.g. interprets $\frac{3}{4}$ to mean 3 lots of $\frac{1}{4}$ or 3 quarters)

Re-imagining the whole

- creates thirds by visualising or approximating and adjusting (e.g. imagines a strip of paper in 3 parts, then adjusts and folds)
- identifies examples and non-examples of partitioned representations of fractions
- divides a whole into different fractional parts for different purposes (e.g. explores the problem of sharing a cake equally between different numbers of guests)
- demonstrates that the more parts into which a whole is divided, the smaller the parts become

Snapshot – Interpreting fractions

Numeracy: Number sense and algebra: Interpreting fractions

Content description

AC9M2M04

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Repeated halving

- makes quarters and eighths of objects and collections by repeated halving (e.g. locates halfway on a strip of paper then halves each half; finds a quarter of an orange by halving and then halving again; 8 counters halved and then halved again into 4 groups of 2)
- identifies the part and the whole in representations of halves, quarters and eighths (e.g. identifies the fractional parts that make up the whole using fraction puzzles)
- represents known fractions using various fraction models (e.g. discrete collections, continuous linear and continuous area)

Repeating fractional parts

- accumulates fractional parts (e.g. knows that two-quarters is inclusive of one-quarter and twice one-quarter, not just the second quarter)
- checks the equality of parts by iterating one part to form the whole (e.g. when given a representation of one-quarter of a length and asked, "what fraction is this of the whole length?", uses the length as a counting unit to make the whole)
- identifies fractions in measurement situations and solves problems using halves, quarters and eighths (e.g. quarters in an AFL match; uses two $\frac{1}{2}$ cup measures in place of a single one-cup measure)
- demonstrates that fractions can be written symbolically and interprets using part-whole knowledge (e.g. interprets $\frac{3}{4}$ to mean 3 lots of $\frac{1}{4}$ or 3 quarters)

Re-imagining the whole

- creates thirds by visualising or approximating and adjusting (e.g. imagines a strip of paper in 3 parts, then adjusts and folds)
- identifies examples and non-examples of partitioned representations of fractions
- divides a whole into different fractional parts for different purposes (e.g. explores the problem of sharing a cake equally between different numbers of guests)
- demonstrates that the more parts into which a whole is divided, the smaller the parts become

Snapshot – Measuring time

Numeracy: Measurement and geometry: Measuring time

Content description

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Sequencing time

- uses the language of time to describe events in relation to past, present and future (e.g. "yesterday I...", "today I...", "tomorrow I will ...", "next week I will ...")
- applies an understanding of passage of time to sequence events using everyday language (e.g. "I play sport on the weekend and have training this afternoon"; "the bell is going to go soon"; "we have cooking tomorrow")
- uses direct comparison to compare time duration of 2 2 2 actions, knowing they must begin the actions at the same time (e.g. who can put their shoes on in the shortest time)
- measures time duration by counting and using informal units (e.g. counts to 30 30 30 while children hide when playing hide and seek)

Units of time

- uses and justifies the appropriate unit of time to describe the duration of events (e.g. uses minutes to describe time taken to clean teeth; uses hours to describe the duration of a long-distance car trip)
- identifies that the clockface is a circle subdivided into 12 12 12 parts and uses these to allocate hour markers
- identifies that hour markers on a clock can also represent quarter-hour and half-hour marks and shows that there is a minute hand and an hour hand on a clock
- identifies the direction of clockwise and anticlockwise relating it to the hands of the clock
- reads time on analog clocks to the hour, half-hour and quarter-hour
- names and orders days of the week and months of the year
- uses a calendar to identify the date and determine the number of days in each month

Measuring time

- uses standard instruments and units to describe and measure time to hours, minutes and seconds (e.g. measures time using a stopwatch; sets a timer on an appliance; estimates the time it would take to walk to the other side of the school oval and uses minutes as the unit of measurement)
- reads and interprets different representations of time (e.g. reads the time on an analog clock, watch or digital clock; uses lap times on a stop watch or fitness app)
- identifies the minute hand movement on an analog clock and the 60 60 60 -minute markings, interpreting the numbers as representing lots of 5 5 5 (e.g. interprets the time on an analog clock to read 7 7 7 : 40 40 40 , by reading the hour hand and the minute hand and explaining how they are related)
- uses smaller units of time such as seconds to record duration of events (e.g. records reaction times in sports or in relation to safe driving)
- uses a calendar to calculate time intervals in days and weeks, bridging months (e.g. develops fitness plans, tracks growth and development progress and sets realistic personal and health goals using a calendar)

Snapshot – Interpreting fractions

Numeracy: Number sense and algebra: Interpreting fractions

Content description

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Repeated halving

- makes quarters and eighths of objects and collections by repeated halving (e.g. locates halfway on a strip of paper then halves each half; finds a quarter of an orange by halving and then halving again; 8 8 8 counters halved and then halved again into 4 4 4 groups of 2 2 2)
- identifies the part and the whole in representations of halves, quarters and eighths (e.g. identifies the fractional parts that make up the whole using fraction puzzles)
- represents known fractions using various fraction models (e.g. discrete collections, continuous

linear and continuous area)

Repeating fractional parts

- accumulates fractional parts (e.g. knows that two-quarters is inclusive of one-quarter and twice one-quarter, not just the second quarter)
- checks the equality of parts by iterating one part to form the whole (e.g. when given a representation of one-quarter of a length and asked, "what fraction is this of the whole length?", uses the length as a counting unit to make the whole)
- identifies fractions in measurement situations and solves problems using halves, quarters and eighths (e.g. quarters in an AFL match; uses two $\frac{1}{2}$ cup measures in place of a single one-cup measure)
- demonstrates that fractions can be written symbolically and interprets using part-whole knowledge (e.g. interprets $\frac{3}{4}$ to mean 3 lots of $\frac{1}{4}$ or 3 one-quarters or 3 lots of $\frac{1}{4}$)

Re-imagining the whole

- creates thirds by visualising or approximating and adjusting (e.g. imagines a strip of paper in 3 parts, then adjusts and folds)
- identifies examples and non-examples of partitioned representations of fractions
- divides a whole into different fractional parts for different purposes (e.g. explores the problem of sharing a cake equally between different numbers of guests)
- demonstrates that the more parts into which a whole is divided, the smaller the parts become

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2M04

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Interpreting fractions

Numeracy: Number sense and algebra: Interpreting fractions

Content description

AC9M2M04

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Repeated halving

- makes quarters and eighths of objects and collections by repeated halving (e.g. locates halfway on a strip of paper then halves each half; finds a quarter of an orange by halving and then halving again; 8 counters halved and then halved again into 4 groups of 2)
- identifies the part and the whole in representations of halves, quarters and eighths (e.g. identifies the fractional parts that make up the whole using fraction puzzles)
- represents known fractions using various fraction models (e.g. discrete collections, continuous linear and continuous area)

Repeating fractional parts

- accumulates fractional parts (e.g. knows that two-quarters is inclusive of one-quarter and twice one-quarter, not just the second quarter)
- checks the equality of parts by iterating one part to form the whole (e.g. when given a representation of one-quarter of a length and asked, "what fraction is this of the whole length?", uses the length as a counting unit to make the whole)
- identifies fractions in measurement situations and solves problems using halves, quarters and eighths (e.g. quarters in an AFL match; uses two $\frac{1}{2}$ cup measures in place of a single one-cup measure)
- demonstrates that fractions can be written symbolically and interprets using part-whole knowledge (e.g. interprets $\frac{3}{4}$ to mean 3 lots of $\frac{1}{4}$ or 3 one-quarters or 3 lots of $\frac{1}{4}$)

Re-imagining the whole

- creates thirds by visualising or approximating and adjusting (e.g. imagines a strip of paper in 3 3 parts, then adjusts and folds)
- identifies examples and non-examples of partitioned representations of fractions
- divides a whole into different fractional parts for different purposes (e.g. explores the problem of sharing a cake equally between different numbers of guests)
- demonstrates that the more parts into which a whole is divided, the smaller the parts become

AC9M2M05

identify, describe and demonstrate quarter, half, three-quarter and full in everyday situations

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-

Elaborations

- identifying things that turn in the school environment; for example, the handle on a tap or a door, the dial or switch on a piece of equipment; identifying a half turn and a full turn, drawing a diagram and labelling it with arrows to show the direction and amount of turn
- giving and following instructions to move during an activity; for example, demonstrating and describing half, quarter and full turns in a choreographed dance
- investigating hands turning on a clock and relating quarter, half and full hours to and the language of clockwise or anti-clockwise
- giving or following directions to locate an in the room, or provide a pathway through a grid, such as programming a robot, referring to quarter, half, three-quarter and full turns

Students learn to:

identify, describe and demonstrate quarter, half, three-quarter and full measures of everyday situations

(AC9M2M05)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Inquiring

- Identify, process and evaluate information

Measurement and geometry

- Understanding units of measurement

Number sense and algebra

- Interpreting fractions

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Speaking and listening

- Speaking

Measurement and geometry

- Positioning and locating

Inquiring

- Identify, process and evaluate information

Measurement and geometry

- Measuring time
- Understanding units of measurement

Number sense and algebra

- Interpreting fractions

Analysing

- Interpret concepts and problems

Inquiring

- Identify, process and evaluate information

Measurement and geometry

- Positioning and locating
- Understanding units of measurement

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2M05

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Understanding units of measurement

Numeracy: Measurement and geometry: Understanding units of measurement

Content description

AC9M2M05

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Using informal units of measurement

- measures an attribute by choosing and using multiple identical, informal units (e.g. measures the distance from one goal post to the other by counting out footsteps; chooses to count out loud to 30 30 30 to give enough time for people to hide in a game of hide and seek)
- selects the appropriate size and dimensions of an informal unit to measure and compare attributes (e.g. chooses a linear unit such as a pencil to measure length, or a bucket to measure the capacity of a large container)
- chooses and uses appropriate uniform informal units to measure length and area without gaps or overlaps (e.g. uses the same sized paper clips to measure the length of a line; uses tiles, rather than counters, to measure the area of a sheet of paper because the tiles fit together without gaps)
- uses multiple uniform informal units to measure and make direct comparisons between the mass or capacity of objects (e.g. uses a balance scale and a number of same-sized marbles to compare mass; uses a number of cups of water or buckets of sand to measure capacity)
- counts the individual uniform units used by ones to compare measurements (e.g. counts the number of matchsticks and says, "I used 4 4 4 matchsticks to measure the width of my book and the shelf is 5 5 5 matchsticks wide, so I know my book will fit")

Estimating measurements

- estimates a measurement based on a number of uniform informal units (e.g. estimates the measurement as "about 4 4 4 handspans" or it takes about 2 2 2 buckets of water)
- checks an estimate using informal units to compare to predicted measurement

Repeating a single informal unit to measure

- measures length using a single informal unit repeatedly (e.g. uses one paper clip to measure the length of a line, making the first unit, marking its place, then moving the paper clip along the line and repeating this process)
- measures the area of a surface using an informal single unit of measure repeatedly (e.g. uses a sheet of paper to measure the area of a desktop)
- measures an attribute by counting the number of informal units used

Estimating measurements

- uses familiar household items as benchmarks when estimating, length, mass and capacity (e.g. compares capacities based on knowing the capacity of a bottle of water such as, "it will take about 3 3 3 bottles to fill")

Describing turns

- describes a turn in both direction and the amount of turn (e.g. a quarter turn to the right, a

full turn on the spot)

Introducing metric units

- recognises standard metric units are used to measure attributes of shapes, objects and events (e.g. identifies units used to measure everyday items; recognises that distances in athletic events are measured in metres such as 100 and 200 metre races)
- uses the array structure to calculate area measured in square units (e.g. draws and describes the column and row structure to represent area as an array of square units, moving beyond counting of squares by ones)
- estimates the measurement of an attribute by visualising between known informal units (e.g. uses a cup to measure a half cup of rice; determines that about 3 3 3 sheets of paper would fit across a desk, and close to 6 6 6 might fit along it, so the area of the desk is about 18 18 1 8 sheets of paper)
- explains the difference between different attributes of the same shape or object and their associated metric units (e.g. length, mass and capacity)

Angles as measures of turn

- describes the size of an angle as a measure of turn and compares familiar measures of turn to known angles (e.g. the angle between the blades gets bigger as you open the scissors; a quarter turn creates a right angle)

Snapshot – Interpreting fractions

Numeracy: Number sense and algebra: Interpreting fractions

Content description

AC9M2M05

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Repeated halving

- makes quarters and eighths of objects and collections by repeated halving (e.g. locates halfway on a strip of paper then halves each half; finds a quarter of an orange by halving and then halving again; 8 8 8 counters halved and then halved again into 4 4 4 groups of 2 2 2)
- identifies the part and the whole in representations of halves, quarters and eighths (e.g. identifies the fractional parts that make up the whole using fraction puzzles)
- represents known fractions using various fraction models (e.g. discrete collections, continuous linear and continuous area)

Repeating fractional parts

- accumulates fractional parts (e.g. knows that two-quarters is inclusive of one-quarter and twice one-quarter, not just the second quarter)
- checks the equality of parts by iterating one part to form the whole (e.g. when given a representation of one-quarter of a length and asked, "what fraction is this of the whole length?", uses the length as a counting unit to make the whole)
- identifies fractions in measurement situations and solves problems using halves, quarters and eighths (e.g. quarters in an AFL match; uses two $\frac{1}{2}$ cup measures in place of a single one-cup measure)
- demonstrates that fractions can be written symbolically and interprets using part-whole knowledge (e.g. interprets $\frac{3}{4}$ to mean 3 3 3 one-quarters or 3 3 3 lots of $\frac{1}{4}$)

Re-imagining the whole

- creates thirds by visualising or approximating and adjusting (e.g. imagines a strip of paper in 3 3 3 parts, then adjusts and folds)
- identifies examples and non-examples of partitioned representations of fractions
- divides a whole into different fractional parts for different purposes (e.g. explores the problem of sharing a cake equally between different numbers of guests)
- demonstrates that the more parts into which a whole is divided, the smaller the parts become

Snapshot – Speaking

Literacy: Speaking and listening: Speaking

Content description

AC9M2M05

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Crafting ideas

- retells personal events and experiences to peers and known adults
- shares feelings and thoughts about the events and characters in text
- retells key details or points from a learning experience or text viewed or heard
- uses mainly appropriate word order
- uses appropriate volume for small audiences
- uses rehearsed phrases to introduce themselves (e.g. "Good morning, my name is ...")

Vocabulary

- uses simple connectives to join ideas (e.g. "and then") (see Grammar)
- uses familiar spoken language to communicate connected ideas (e.g. "Let's draw. I'll get paper and pencils.")
- uses simple adjectives and adverbs to add detail (e.g. "yellow", "quickly") (see Grammar)
- uses a small range of qualifying adjectives (e.g. "nice", "good") (see Grammar)
- uses simple language to compare and contrast (e.g. "smaller", "more")
- uses common time and causal connectives to relate ideas (e.g. "then", "because") (see Grammar)

Crafting ideas

- creates short texts using a few connected sentences, on familiar and learnt topics (e.g. retells a familiar story or describes a process)
- speaks audibly and clearly to a familiar audience (e.g. own class)
- uses some extended sentences
- organises key ideas in logical sequence
- provides some supporting details
- expresses causal relationships (e.g. "when the egg cracked, the chicken came out")
- provides simple justifications (e.g. "I chose cherries because they are red.")
- uses some varying intonation or volume for emphasis
- regulates pace with pausing

Vocabulary

- uses some precise vocabulary from learning areas
- uses connectives to sequence ideas (e.g. "first", "then", "next", "finally") (see Grammar)
- uses vocabulary to express cause and effect (e.g. "The excursion was cancelled because it rained.")
- uses some modal language to influence or persuade (e.g. "should", "will") (see Grammar)

Crafting ideas

- creates spoken texts for a range of purposes across learning areas (e.g. explains how the mathematics problem was solved)
- uses complex sentence constructions including relative clauses (e.g. "The boy who drew the picture got a prize.") (see Grammar)
- adjusts register according to purpose and audience
- elaborates on ideas using a short sequence of sentences
- incorporates learnt content into spoken text
- sequences ideas and events appropriately
- uses mainly correct grammatical constructions (e.g. pronoun references; noun-verb agreement)
- varies volume and intonation to suit purpose and audience
- plans and delivers spoken presentations using appropriate structure and language
- includes video and audio enhancements to spoken texts, where appropriate (e.g. includes slides or pictures in a spoken presentation)

Vocabulary

- experiments with vocabulary drawn from a variety of sources
- uses adverbials to give more precise meaning to verbs (e.g. talking loudly) (see Grammar)
- uses a range of vocabulary to indicate connections (e.g. consequences)
- uses conditional vocabulary to expand upon ideas (e.g. "If Goldilocks ate all the porridge the bears would be hungry.")

Snapshot – Positioning and locating

Numeracy: Measurement and geometry: Positioning and locating

Content description

AC9M2M05

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Position to self

- locates positions in the classroom relevant to self (e.g. hangs their hat on their own hook, puts materials in their own tray; says "my bag is under my desk")
- orients self to other positions in the classroom (e.g. collects a box of scissors from the shelf at the back of the classroom)
- follows simple instructions using positional language (e.g. "please stand near the door", "you can sit on your chair", "put your pencil case in your bag", "crawl through the tunnel")

Position to other

- uses positional terms with reference to themselves (e.g. "sit next to me", "you stood in front of me", "this is my left hand")
- interprets a simple diagram or picture to describe the position of an object in relation to other objects (e.g. "the house is between the river and the school")
- gives and follows simple directions to move from one place to another using familiar reference points (e.g. "walk past the flagpole around the vegetable patch and you will find Mr Smith's classroom")

Using informal maps and plans

- draws an informal map or sketch to provide directions (e.g. draws a dance map when planning choreography; sketches the pathway to provide directions for a robotic vehicle to move from one location to another within a space)
- describes and locates relative positions on an informal map or plan (e.g. locates the starting position for the cross-country race using an informal map of the course; uses a seating plan to describe where they sit relative to the teacher's desk)
- orients an informal map using recognisable landmarks and current location (e.g. orients a map to show the location of the audience and locates the entry and exit points of the school gymnasium)
- locates self on an informal map to select an appropriate path to a given location

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2M05

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Measuring time

Numeracy: Measurement and geometry: Measuring time

Content description

AC9M2M05

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Sequencing time

- uses the language of time to describe events in relation to past, present and future (e.g.

"yesterday I...", "today I ...", "tomorrow I will ...", "next week I will ...")

- applies an understanding of passage of time to sequence events using everyday language (e.g. "I play sport on the weekend and have training this afternoon"; "the bell is going to go soon"; "we have cooking tomorrow")
- uses direct comparison to compare time duration of 2 2 2 actions, knowing they must begin the actions at the same time (e.g. who can put their shoes on in the shortest time)
- measures time duration by counting and using informal units (e.g. counts to 30 30 3 0 while children hide when playing hide and seek)

Units of time

- uses and justifies the appropriate unit of time to describe the duration of events (e.g. uses minutes to describe time taken to clean teeth; uses hours to describe the duration of a long-distance car trip)
- identifies that the clockface is a circle subdivided into 12 12 1 2 parts and uses these to allocate hour markers
- identifies that hour markers on a clock can also represent quarter-hour and half-hour marks and shows that there is a minute hand and an hour hand on a clock
- identifies the direction of clockwise and anticlockwise relating it to the hands of the clock
- reads time on analog clocks to the hour, half-hour and quarter-hour
- names and orders days of the week and months of the year
- uses a calendar to identify the date and determine the number of days in each month

Measuring time

- uses standard instruments and units to describe and measure time to hours, minutes and seconds (e.g. measures time using a stopwatch; sets a timer on an appliance; estimates the time it would take to walk to the other side of the school oval and uses minutes as the unit of measurement)
- reads and interprets different representations of time (e.g. reads the time on an analog clock, watch or digital clock; uses lap times on a stop watch or fitness app)
- identifies the minute hand movement on an analog clock and the 60 60 6 0 -minute markings, interpreting the numbers as representing lots of 5 5 5 (e.g. interprets the time on an analog clock to read 7 7 7 : 40 40 4 0 , by reading the hour hand and the minute hand and explaining how they are related)
- uses smaller units of time such as seconds to record duration of events (e.g. records reaction times in sports or in relation to safe driving)
- uses a calendar to calculate time intervals in days and weeks, bridging months (e.g. develops fitness plans, tracks growth and development progress and sets realistic personal and health goals using a calendar)

Snapshot – Understanding units of measurement

Numeracy: Measurement and geometry: Understanding units of measurement

Content description

AC9M2M05

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Using informal units of measurement

- measures an attribute by choosing and using multiple identical, informal units (e.g. measures the distance from one goal post to the other by counting out footsteps; chooses to count out loud to 30 30 3 0 to give enough time for people to hide in a game of hide and seek)
- selects the appropriate size and dimensions of an informal unit to measure and compare attributes (e.g. chooses a linear unit such as a pencil to measure length, or a bucket to measure the capacity of a large container)
- chooses and uses appropriate uniform informal units to measure length and area without gaps or overlaps (e.g. uses the same sized paper clips to measure the length of a line; uses tiles, rather than counters, to measure the area of a sheet of paper because the tiles fit together without gaps)
- uses multiple uniform informal units to measure and make direct comparisons between the mass or capacity of objects (e.g. uses a balance scale and a number of same-sized marbles to compare mass; uses a number of cups of water or buckets of sand to measure capacity)
- counts the individual uniform units used by ones to compare measurements (e.g. counts the number

of matchsticks and says, "I used 4 4 4 matchsticks to measure the width of my book and the shelf is 5 5 5 matchsticks wide, so I know my book will fit")

Estimating measurements

- estimates a measurement based on a number of uniform informal units (e.g. estimates the measurement as "about 4 4 4 handspans" or it takes about 2 2 2 buckets of water)
- checks an estimate using informal units to compare to predicted measurement

Repeating a single informal unit to measure

- measures length using a single informal unit repeatedly (e.g. uses one paper clip to measure the length of a line, making the first unit, marking its place, then moving the paper clip along the line and repeating this process)
- measures the area of a surface using an informal single unit of measure repeatedly (e.g. uses a sheet of paper to measure the area of a desktop)
- measures an attribute by counting the number of informal units used

Estimating measurements

- uses familiar household items as benchmarks when estimating, length, mass and capacity (e.g. compares capacities based on knowing the capacity of a bottle of water such as, "it will take about 3 3 3 bottles to fill")

Describing turns

- describes a turn in both direction and the amount of turn (e.g. a quarter turn to the right, a full turn on the spot)

Introducing metric units

- recognises standard metric units are used to measure attributes of shapes, objects and events (e.g. identifies units used to measure everyday items; recognises that distances in athletic events are measured in metres such as 100 and 200 metre races)
- uses the array structure to calculate area measured in square units (e.g. draws and describes the column and row structure to represent area as an array of square units, moving beyond counting of squares by ones)
- estimates the measurement of an attribute by visualising between known informal units (e.g. uses a cup to measure a half cup of rice; determines that about 3 3 3 sheets of paper would fit across a desk, and close to 6 6 6 might fit along it, so the area of the desk is about 18 18 1 8 sheets of paper)
- explains the difference between different attributes of the same shape or object and their associated metric units (e.g. length, mass and capacity)

Angles as measures of turn

- describes the size of an angle as a measure of turn and compares familiar measures of turn to known angles (e.g. the angle between the blades gets bigger as you open the scissors; a quarter turn creates a right angle)

Snapshot – Interpreting fractions

Numeracy: Number sense and algebra: Interpreting fractions

Content description

AC9M2M05

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Repeated halving

- makes quarters and eighths of objects and collections by repeated halving (e.g. locates halfway on a strip of paper then halves each half; finds a quarter of an orange by halving and then halving again; 8 8 8 counters halved and then halved again into 4 4 4 groups of 2 2 2)
- identifies the part and the whole in representations of halves, quarters and eighths (e.g. identifies the fractional parts that make up the whole using fraction puzzles)
- represents known fractions using various fraction models (e.g. discrete collections, continuous linear and continuous area)

Repeating fractional parts

- accumulates fractional parts (e.g. knows that two-quarters is inclusive of one-quarter and twice one-quarter, not just the second quarter)

- checks the equality of parts by iterating one part to form the whole (e.g. when given a representation of one-quarter of a length and asked, "what fraction is this of the whole length?", uses the length as a counting unit to make the whole)
- identifies fractions in measurement situations and solves problems using halves, quarters and eighths (e.g. quarters in an AFL match; uses two $\frac{1}{2}$ cup measures in place of a single one-cup measure)
- demonstrates that fractions can be written symbolically and interprets using part-whole knowledge (e.g. interprets $\frac{3}{4}$ to mean 3 lots of $\frac{1}{4}$ or $\frac{3}{4}$ of 1)

Re-imagining the whole

- creates thirds by visualising or approximating and adjusting (e.g. imagines a strip of paper in 3 parts, then adjusts and folds)
- identifies examples and non-examples of partitioned representations of fractions
- divides a whole into different fractional parts for different purposes (e.g. explores the problem of sharing a cake equally between different numbers of guests)
- demonstrates that the more parts into which a whole is divided, the smaller the parts become

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2M05

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2M05

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Positioning and locating

Numeracy: Measurement and geometry: Positioning and locating

Content description

AC9M2M05

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Position to self

- locates positions in the classroom relevant to self (e.g. hangs their hat on their own hook, puts materials in their own tray; says "my bag is under my desk")
- orients self to other positions in the classroom (e.g. collects a box of scissors from the shelf at the back of the classroom)
- follows simple instructions using positional language (e.g. "please stand near the door", "you can sit on your chair", "put your pencil case in your bag", "crawl through the tunnel")

Position to other

- uses positional terms with reference to themselves (e.g. "sit next to me", "you stood in front of")

me", "this is my left hand")

- interprets a simple diagram or picture to describe the position of an object in relation to other objects (e.g. "the house is between the river and the school")
- gives and follows simple directions to move from one place to another using familiar reference points (e.g. "walk past the flagpole around the vegetable patch and you will find Mr Smith's classroom")

Using informal maps and plans

- draws an informal map or sketch to provide directions (e.g. draws a dance map when planning choreography; sketches the pathway to provide directions for a robotic vehicle to move from one location to another within a space)
- describes and locates relative positions on an informal map or plan (e.g. locates the starting position for the cross-country race using an informal map of the course; uses a seating plan to describe where they sit relative to the teacher's desk)
- orients an informal map using recognisable landmarks and current location (e.g. orients a map to show the location of the audience and locates the entry and exit points of the school gymnasium)
- locates self on an informal map to select an appropriate path to a given location

Snapshot – Understanding units of measurement

Numeracy: Measurement and geometry: Understanding units of measurement

Content description

AC9M2M05

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Using informal units of measurement

- measures an attribute by choosing and using multiple identical, informal units (e.g. measures the distance from one goal post to the other by counting out footsteps; chooses to count out loud to 30 30 30 to give enough time for people to hide in a game of hide and seek)
- selects the appropriate size and dimensions of an informal unit to measure and compare attributes (e.g. chooses a linear unit such as a pencil to measure length, or a bucket to measure the capacity of a large container)
- chooses and uses appropriate uniform informal units to measure length and area without gaps or overlaps (e.g. uses the same sized paper clips to measure the length of a line; uses tiles, rather than counters, to measure the area of a sheet of paper because the tiles fit together without gaps)
- uses multiple uniform informal units to measure and make direct comparisons between the mass or capacity of objects (e.g. uses a balance scale and a number of same-sized marbles to compare mass; uses a number of cups of water or buckets of sand to measure capacity)
- counts the individual uniform units used by ones to compare measurements (e.g. counts the number of matchsticks and says, "I used 4 4 4 matchsticks to measure the width of my book and the shelf is 5 5 5 matchsticks wide, so I know my book will fit")

Estimating measurements

- estimates a measurement based on a number of uniform informal units (e.g. estimates the measurement as "about 4 4 4 handspans" or it takes about 2 2 2 buckets of water)
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Repeating a single informal unit to measure

- measures length using a single informal unit repeatedly (e.g. uses one paper clip to measure the length of a line, making the first unit, marking its place, then moving the paper clip along the line and repeating this process)
- measures the area of a surface using an informal single unit of measure repeatedly (e.g. uses a sheet of paper to measure the area of a desktop)
- measures an attribute by counting the number of informal units used

Estimating measurements

- uses familiar household items as benchmarks when estimating, length, mass and capacity (e.g. compares capacities based on knowing the capacity of a bottle of water such as, "it will take about 3 3 3 bottles to fill")

Describing turns

- describes a turn in both direction and the amount of turn (e.g. a quarter turn to the right, a full turn on the spot)

Introducing metric units

- recognises standard metric units are used to measure attributes of shapes, objects and events (e.g. identifies units used to measure everyday items; recognises that distances in athletic events are measured in metres such as 100 and 200 metre races)
- uses the array structure to calculate area measured in square units (e.g. draws and describes the column and row structure to represent area as an array of square units, moving beyond counting of squares by ones)
- estimates the measurement of an attribute by visualising between known informal units (e.g. uses a cup to measure a half cup of rice; determines that about 3 3 3 sheets of paper would fit across a desk, and close to 6 6 6 might fit along it, so the area of the desk is about 18 18 1 8 sheets of paper)
- explains the difference between different attributes of the same shape or object and their associated metric units (e.g. length, mass and capacity)

Angles as measures of turn

- describes the size of an angle as a measure of turn and compares familiar measures of turn to known angles (e.g. the angle between the blades gets bigger as you open the scissors; a quarter turn creates a right angle)

AC9M2SP01

recognise, compare and classify , referencing the number of sides and using spatial terms such as “opposite”, “parallel”, “curved” and “straight”

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Elaborations

- sorting a collection of in different ways based on their features such as number of sides, whether all sides are equal, whether pairs of opposite sides are parallel; for example, collections of triangles and other polygons
- manipulating and recognising that different orientations do not change the ; for example, cutting out pictures of various , recognising they are they are still classified as the same even if they are upside down or on their side
- investigating the of different sporting fields, describing and labelling their features including side , and goal squares; for example, labelling the on a basketball court and using spatial terms to describe them
- creating using , describing and observing what happens when you manipulate them; for example, dragging or pushing vertices to produce , moving or rotating a

Students learn to:

recognise, compare and classify shapes, referencing the number of sides and using as “opposite”, “parallel”, “curved” and “straight”

(AC9M2SP01)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Analysing

- Interpret concepts and problems

Inquiring

- Identify, process and evaluate information

Measurement and geometry

- Understanding geometric properties

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Generating

- Consider alternatives

Inquiring

- Identify, process and evaluate information

Analysing

- Interpret concepts and problems

Generating

- Put ideas into action

Speaking and listening

- Speaking

Managing and operating

- Select and operate tools

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9TDE2P01

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2SP01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2SP01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Understanding geometric properties

Numeracy: Measurement and geometry: Understanding geometric properties

Content description

AC9M2SP01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Features of shapes and objects

- identifies and describes features of shapes and objects (e.g. sides, corners, faces, edges and vertices)
- sorts and classifies familiar shapes and objects based on obvious features (e.g. triangles have 3 sides; a sphere is round like a ball)

Transformations

- identifies features of shapes and objects of different sizes and in different orientations in the environment (e.g. identifies a rotated view of an object made out of centicubes; compares representation of familiar shapes and objects in visual artworks from different cultures, times and

places commenting on their features)

- explains that the shape or object does not change when presented in different orientations (e.g. a square remains a square when rotated)

Angles

- identifies angles in the environment (e.g. an angle formed when a door is opened; identifies that there are 4 4 4 angles in a square)

Properties of shapes and objects

- identifies the relationship between the number of sides of a two-dimensional shape and the number of vertices (e.g. if the shape has 4 4 4 sides, it has 4 4 4 vertices)
- describes and identifies the two-dimensional shapes that form the faces of three-dimensional objects (e.g. recognises the faces of a triangular prism as triangles and rectangles)
- represents shapes and objects (e.g. drawing and sketching; model building such as skeletal models and centi-cubes; using digital drawing packages; manipulates body to create shapes and objects when choreographing dance)

Transformations

- determines whether a shape has line symmetry (e.g. folds paper cut-outs of basic shapes to demonstrate which has line symmetry and which does not)
- identifies symmetry in the environment
- identifies and creates geometrical patterns involving the repetition of familiar shapes (e.g. uses pattern blocks to create a pattern and describes how the pattern was created)

Angles

- compares angles to a right angle, classifying them as greater than, less than or equal to a right angle

Properties of shapes and object

- identifies, names and classifies two-dimensional shapes according to their side and angle properties (e.g. describes a square as a regular rectangle)
- identifies key features of shapes (e.g. explains that quadrilaterals have 2 2 2 diagonals however they are not always equal in length)
- aligns three-dimensional objects to their two-dimensional nets
- identifies the relationship between the number of faces, edges and the number of vertices of a three-dimensional object (e.g. uses a table to list the number of faces, edges and vertices of common three-dimensional objects and identifies the relationships in the data)

Transformations

- identifies that shapes can have rotational symmetry (e.g. "this drawing of a flower is symmetrical as I can spin it around both ways and it always looks exactly the same")
- creates symmetrical designs using a range of shapes and identifies the type of symmetry as appropriate (e.g. uses symmetry as a stimulus for choreographing a dance; analyses the symmetrical qualities, shapes and lines in examples of Islamic art)
- creates tessellating patterns with common shapes, deciding which will tessellate and which will not by referring to their sides and angles

Angles

- estimates, compares and constructs angles (e.g. uses a ruler and protractor to construct a 45° angle; compares the size of angles in the environment and estimates their size)
- describes angles in the environment according to their size as acute, obtuse, right, straight, reflex or a revolution and identifies them in shapes and objects (e.g. identifies slope as angles in the environment such as the ramp outside of the school block)

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2SP01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- consider alternatives by suggesting a different way to approach a given task or problem
- consider alternatives and explore different or creative ways to approach a task or problem
- consider alternatives by comparing different or creative ways to approach a task, issue or problem

and recommend a preferred option

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2SP01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2SP01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Put ideas into action

Critical and Creative Thinking: Generating: Put ideas into action

Content description

AC9M2SP01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- put ideas into action through trial-and-error experiences
- put ideas into action by experimenting with options and predicting possible results
- put ideas into action by predicting an outcome, trialling options and assessing their effectiveness

Snapshot – Speaking

Literacy: Speaking and listening: Speaking

Content description

AC9M2SP01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Crafting ideas

- retells personal events and experiences to peers and known adults
- shares feelings and thoughts about the events and characters in text
- retells key details or points from a learning experience or text viewed or heard
- uses mainly appropriate word order
- uses appropriate volume for small audiences
- uses rehearsed phrases to introduce themselves (e.g. "Good morning, my name is ...")

Vocabulary

- uses simple connectives to join ideas (e.g. "and then") (see Grammar)
- uses familiar spoken language to communicate connected ideas (e.g. "Let's draw. I'll get paper and pencils.")
- uses simple adjectives and adverbs to add detail (e.g. "yellow", "quickly") (see Grammar)

- uses a small range of qualifying adjectives (e.g. "nice", "good") (see Grammar)
- uses simple language to compare and contrast (e.g. "smaller", "more")
- uses common time and causal connectives to relate ideas (e.g. "then", "because") (see Grammar)

Crafting ideas

- creates short texts using a few connected sentences, on familiar and learnt topics (e.g. retells a familiar story or describes a process)
- speaks audibly and clearly to a familiar audience (e.g. own class)
- uses some extended sentences
- organises key ideas in logical sequence
- provides some supporting details
- expresses causal relationships (e.g. "when the egg cracked, the chicken came out")
- provides simple justifications (e.g. "I chose cherries because they are red.")
- uses some varying intonation or volume for emphasis
- regulates pace with pausing

Vocabulary

- uses some precise vocabulary from learning areas
- uses connectives to sequence ideas (e.g. "first", "then", "next", "finally") (see Grammar)
- uses vocabulary to express cause and effect (e.g. "The excursion was cancelled because it rained.")
- uses some modal language to influence or persuade (e.g. "should", "will") (see Grammar)

Crafting ideas

- creates spoken texts for a range of purposes across learning areas (e.g. explains how the mathematics problem was solved)
- uses complex sentence constructions including relative clauses (e.g. "The boy who drew the picture got a prize.") (see Grammar)
- adjusts register according to purpose and audience
- elaborates on ideas using a short sequence of sentences
- incorporates learnt content into spoken text
- sequences ideas and events appropriately
- uses mainly correct grammatical constructions (e.g. pronoun references; noun-verb agreement)
- varies volume and intonation to suit purpose and audience
- plans and delivers spoken presentations using appropriate structure and language
- includes video and audio enhancements to spoken texts, where appropriate (e.g. includes slides or pictures in a spoken presentation)

Vocabulary

- experiments with vocabulary drawn from a variety of sources
- uses adverbials to give more precise meaning to verbs (e.g. talking loudly) (see Grammar)
- uses a range of vocabulary to indicate connections (e.g. consequences)
- uses conditional vocabulary to expand upon ideas (e.g. "If Goldilocks ate all the porridge the bears would be hungry.")

Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

Content description

AC9M2SP01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- use simple digital tools to explore tasks and consolidate learning
- seek help when encountering a problem
- use familiar digital tools to complete tasks and consolidate learning
- attempt to solve a problem before seeking help
- select and use a range of digital tools to complete tasks
- attempt to solve a problem individually and with peers before seeking help

AC9M2SP02

locate positions in representations of a familiar space; move positions by following directions and pathways

-
-

Elaborations

- interpreting maps of familiar places and identifying the position of key features
- understanding that we use maps to receive and give directions and to describe place and spatial relationships between places
- using a classroom seating plan to locate a new seating position and giving directions to other classmates to find their seats
- following and creating movement instructions that need to be carried out to move through a 4 × 4 4 \times 4 4 × 4 grid mat on the classroom floor or on a computer screen; for example, one forward, 2 2 2 to the right and one backwards, and so on to reach a target square; using a robotic toy to follow a path on a street scene on a floor mat, adjusting their directions as they consider the order of their instructions, the direction and how far they want the toy to travel
- moving around a maze using to describe turns and changes in direction including saying, for example, “clockwise”, “anticlockwise”, “quarter turn to the left”, and “take the path to the right”

Students learn to:

**locate positions in two-dimensional representations of a familiar space; move posit
directions and pathways**

(AC9M2SP02)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Analysing

- Interpret concepts and problems

Measurement and geometry

- Positioning and locating

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Analysing

- Interpret concepts and problems

Analysing

- Interpret concepts and problems

Speaking and listening

- Speaking

Social management

- Communication

Analysing

- Interpret concepts and problems

Generating

- Consider alternatives

Analysing

- Interpret concepts and problems

Generating

- Consider alternatives

Speaking and listening

- Speaking

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9ADA2D01

AC9HP2M02

AC9HS2S02

AC9TDI2P02

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2SP02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Positioning and locating

Numeracy: Measurement and geometry: Positioning and locating

Content description

AC9M2SP02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Position to other

- uses positional terms with reference to themselves (e.g. "sit next to me", "you stood in front of me", "this is my left hand")
- interprets a simple diagram or picture to describe the position of an object in relation to other objects (e.g. "the house is between the river and the school")
- gives and follows simple directions to move from one place to another using familiar reference points (e.g. "walk past the flagpole around the vegetable patch and you will find Mr Smith's classroom")

Using informal maps and plans

- draws an informal map or sketch to provide directions (e.g. draws a dance map when planning choreography; sketches the pathway to provide directions for a robotic vehicle to move from one location to another within a space)
- describes and locates relative positions on an informal map or plan (e.g. locates the starting position for the cross-country race using an informal map of the course; uses a seating plan to describe where they sit relative to the teacher's desk)
- orients an informal map using recognisable landmarks and current location (e.g. orients a map to show the location of the audience and locates the entry and exit points of the school gymnasium)
- locates self on an informal map to select an appropriate path to a given location

Using formal maps and plans

- locates position on maps using grid references (e.g. locates the school in cell E5; uses grid references to identify specific locations on a stage and when creating a stage plan, lighting design or prompt script)
- describes routes using landmarks and directional language including reference to quarter, half, three-quarter turns; turns to the left and right; clockwise and anticlockwise turns (e.g. communicates strategic plays in relation to coaching a team game or sport)
- interprets keys, simple scales and compass directions contained within a map to locate features (e.g. uses a map and compass directions when bush walking or orienteering)

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2SP02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2SP02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Speaking

Literacy: Speaking and listening: Speaking

Content description

AC9M2SP02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Crafting ideas

- retells personal events and experiences to peers and known adults
- shares feelings and thoughts about the events and characters in text
- retells key details or points from a learning experience or text viewed or heard
- uses mainly appropriate word order
- uses appropriate volume for small audiences
- uses rehearsed phrases to introduce themselves (e.g. "Good morning, my name is ...")

Vocabulary

- uses simple connectives to join ideas (e.g. "and then") (see Grammar)
- uses familiar spoken language to communicate connected ideas (e.g. "Let's draw. I'll get paper and pencils.")
- uses simple adjectives and adverbs to add detail (e.g. "yellow", "quickly") (see Grammar)
- uses a small range of qualifying adjectives (e.g. "nice", "good") (see Grammar)
- uses simple language to compare and contrast (e.g. "smaller", "more")
- uses common time and causal connectives to relate ideas (e.g. "then", "because") (see Grammar)

Crafting ideas

- creates short texts using a few connected sentences, on familiar and learnt topics (e.g. retells a familiar story or describes a process)
- speaks audibly and clearly to a familiar audience (e.g. own class)
- uses some extended sentences
- organises key ideas in logical sequence
- provides some supporting details
- expresses causal relationships (e.g. "when the egg cracked, the chicken came out")
- provides simple justifications (e.g. "I chose cherries because they are red.")
- uses some varying intonation or volume for emphasis
- regulates pace with pausing

Vocabulary

- uses some precise vocabulary from learning areas
- uses connectives to sequence ideas (e.g. "first", "then", "next", "finally") (see Grammar)
- uses vocabulary to express cause and effect (e.g. "The excursion was cancelled because it rained.")
- uses some modal language to influence or persuade (e.g. "should", "will") (see Grammar)

Crafting ideas

- creates spoken texts for a range of purposes across learning areas (e.g. explains how the mathematics problem was solved)
- uses complex sentence constructions including relative clauses (e.g. "The boy who drew the picture got a prize.") (see Grammar)
- adjusts register according to purpose and audience
- elaborates on ideas using a short sequence of sentences
- incorporates learnt content into spoken text

- sequences ideas and events appropriately
- uses mainly correct grammatical constructions (e.g. pronoun references; noun-verb agreement)
- varies volume and intonation to suit purpose and audience
- plans and delivers spoken presentations using appropriate structure and language
- includes video and audio enhancements to spoken texts, where appropriate (e.g. includes slides or pictures in a spoken presentation)

Vocabulary

- experiments with vocabulary drawn from a variety of sources
- uses adverbials to give more precise meaning to verbs (e.g. talking loudly) (see Grammar)
- uses a range of vocabulary to indicate connections (e.g. consequences)
- uses conditional vocabulary to expand upon ideas (e.g. "If Goldilocks ate all the porridge the bears would be hungry.")

Snapshot – Communication

Personal and Social capability: Social management: Communication

Content description

AC9M2SP02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- develop positive communication skills by initiating, joining or contributing to conversations
- use a range of skills to enhance verbal and non-verbal communication
- apply verbal and non-verbal communication skills when responding to others

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2SP02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2SP02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- consider alternatives by suggesting a different way to approach a given task or problem
- consider alternatives and explore different or creative ways to approach a task or problem
- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9M2SP02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify the main parts of a concept or problem
- identify the main parts of a concept or problem and describe how these relate to each other
- identify and prioritise significant elements and relationships within a concept or problem

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- consider alternatives by suggesting a different way to approach a given task or problem
- consider alternatives and explore different or creative ways to approach a task or problem
- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option

Snapshot – Speaking

Literacy: Speaking and listening: Speaking

Content description

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Crafting ideas

- retells personal events and experiences to peers and known adults
- shares feelings and thoughts about the events and characters in text
- retells key details or points from a learning experience or text viewed or heard
- uses mainly appropriate word order
- uses appropriate volume for small audiences
- uses rehearsed phrases to introduce themselves (e.g. "Good morning, my name is ...")

Vocabulary

- uses simple connectives to join ideas (e.g. "and then") (see Grammar)
- uses familiar spoken language to communicate connected ideas (e.g. "Let's draw. I'll get paper and pencils.")
- uses simple adjectives and adverbs to add detail (e.g. "yellow", "quickly") (see Grammar)
- uses a small range of qualifying adjectives (e.g. "nice", "good") (see Grammar)
- uses simple language to compare and contrast (e.g. "smaller", "more")
- uses common time and causal connectives to relate ideas (e.g. "then", "because") (see Grammar)

Crafting ideas

- creates short texts using a few connected sentences, on familiar and learnt topics (e.g. retells a familiar story or describes a process)
- speaks audibly and clearly to a familiar audience (e.g. own class)
- uses some extended sentences
- organises key ideas in logical sequence
- provides some supporting details
- expresses causal relationships (e.g. "when the egg cracked, the chicken came out")
- provides simple justifications (e.g. "I chose cherries because they are red.")
- uses some varying intonation or volume for emphasis
- regulates pace with pausing

Vocabulary

- uses some precise vocabulary from learning areas
- uses connectives to sequence ideas (e.g. "first", "then", "next", "finally") (see Grammar)
- uses vocabulary to express cause and effect (e.g. "The excursion was cancelled because it rained.")
- uses some modal language to influence or persuade (e.g. "should", "will") (see Grammar)

Crafting ideas

- creates spoken texts for a range of purposes across learning areas (e.g. explains how the mathematics problem was solved)
- uses complex sentence constructions including relative clauses (e.g. "The boy who drew the picture got a prize.") (see Grammar)
- adjusts register according to purpose and audience
- elaborates on ideas using a short sequence of sentences
- incorporates learnt content into spoken text
- sequences ideas and events appropriately

- uses mainly correct grammatical constructions (e.g. pronoun references; noun-verb agreement)
- varies volume and intonation to suit purpose and audience
- plans and delivers spoken presentations using appropriate structure and language
- includes video and audio enhancements to spoken texts, where appropriate (e.g. includes slides or pictures in a spoken presentation)

Vocabulary

- experiments with vocabulary drawn from a variety of sources
- uses adverbials to give more precise meaning to verbs (e.g. talking loudly) (see Grammar)
- uses a range of vocabulary to indicate connections (e.g. consequences)
- uses conditional vocabulary to expand upon ideas (e.g. "If Goldilocks ate all the porridge the bears would be hungry.")

AC9M2ST01

for through , observation, experiment and using ; sort into relevant categories and display using lists and tables

-
-

Elaborations

- posing a question of interest about favourite things; for example, asking classmates what are their favourite types of fruit, football teams, days of the week, and recording responses using a table; using strategies to determine the number of different responses and the most popular and least popular responses
- investigating questions, such as "How much rubbish is really rubbish?" by gathering about in categories; for example, throw away, recycle and reuse; deciding whether the answers the question
- using familiar software or generative artificial intelligence tools, to a to collect class , sorting and interpreting responses, and considering the questions asked and whether they need to be modified to reuse the
- observing and using the observations to design a table or list to record ; for example, observing students arriving at school prior to deciding the appropriate categories for investigating the different ways students get to school
- exploring the ways First Nations Australians observe, collect, sort and record

Students learn to:

acquire data for categorical variables through surveys, observation, experiment and tools; sort data into relevant categories and display data using lists and tables

(AC9M2ST01)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Investigating

- Acquire and collate data
- Interpret data

Statistics and probability

- Interpreting and representing data

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Analysing

- Draw conclusions and provide reasons

Inquiring

- Develop questions
- Identify, process and evaluate information

Number sense and algebra

- Counting processes

Inquiring

- Identify, process and evaluate information

Speaking and listening

- Interacting

Inquiring

- Identify, process and evaluate information

Investigating

- Acquire and collate data
- Interpret data

Managing and operating

- Select and operate tools

Analysing

- Draw conclusions and provide reasons

Inquiring

- Identify, process and evaluate information

People

- First Nations Australians have sophisticated political, economic and social organisation systems, which include family and kinship structures, laws, traditions, customs, land tenure systems, and protocols for strong governance and authority.

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9HS2S02

AC9HS2S03

AC9S2I03

AC9S2I04

AC9S2U01

AC9TDI2K02

Resources

Work Samples

WS03 - The most popular use of the play space

Snapshot – Acquire and collate data

Digital Literacy: Investigating: Acquire and collate data

Content description

AC9M2ST01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- collect data by counting, measuring and observing with familiar digital tools
- collect and access data using a range of digital tools and methods in response to a defined question

Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9M2ST01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- use simple digital tools to explore sorting data and information provided as part of learning experiences
- classify and group data using digital familiar tools to answer simple questions
- organise, summarise and visualise data using a range of digital tools to identify patterns and answer questions

Snapshot – Interpreting and representing data

Numeracy: Statistics and probability: Interpreting and representing data

Content description

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Basic one-to-one data displays

- poses questions that could be investigated from a simple numerical or categorical data set (e.g. number of family members, types of pets, where people live)
- displays and describes one variable data in lists or tables
- communicates information through text, picture graphs and tables using numbers and symbols (e.g. creates picture graphs to display one-variable data)
- responds to questions and interprets general observations made about data represented in simple one-to-one data displays (e.g. responds to questions about the information represented in a simple picture graph that uses a one-to-one representation)

Collecting, displaying and interpreting categorical data

- designs survey questions to collect categorical data (e.g. creates a suite of survey questions to plan the end of year class party)
- collects, records and displays one-variable data in variety of ways such as tables, charts, plots and graphs using the appropriate digital tools (e.g. uses a spreadsheet to record data collected in a class survey and generates a column graph to display the results)
- displays and interprets categorical data in one-to-many data displays
- interprets and represents categorical data in simple displays such as bar and column graphs, pie charts, models, maps, colour wheels, and pictorial timelines, and makes simple inferences from such displays
- makes comparisons from categorical data displays using relative heights from a common baseline (e.g. compares the heights of the columns in a simple column graph to determine the tallest and recognises this as the most frequent response)

Collecting, displaying and interpreting numerical data

- collects and records discrete numerical data using an appropriate method for recording (e.g. uses a frequency table to record the experimental results for rolling a dice; records sample measurements taken during a science investigation)
- constructs graphical representations of numerical data and explains the difference between continuous and discrete data (e.g. explains that measurements such as length, mass and temperature are continuous data whereas a count such as the number of people in a queue is discrete)
- explains how data displays can be misleading (e.g. whether a scale should start at zero; not using uniform intervals on the axes)
- interprets visual representations of data displayed using a multi-unit scale, reading values between the marked units and describing any variation and trends in the data

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- draw conclusions and make choices when completing tasks and identify the reasons for choices made
- draw conclusions and make choices when completing tasks and explain the reasons for choices made
- draw conclusions and make choices when completing tasks, using observation and prior knowledge to provide reasons and construct arguments for choices made

Snapshot – Develop questions

Critical and Creative Thinking: Inquiring: Develop questions

Content description

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- develop questions to explore a familiar idea or topic

- questions developed reflect their curiosity about the world
- develop questions to explore a familiar idea or topic
- questions developed are fit for the purpose of the investigation
- develop questions to examine unfamiliar ideas and topics
- questions developed support the process of improving knowledge and understanding about a topic or investigation

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2ST01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Counting processes

Numeracy: Number sense and algebra: Counting processes

Content description

AC9M2ST01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Counting sequences

- uses knowledge of the counting sequence to determine the next number or previous number from a number in the range 1 – 10 1–10 1 – 1 0 (e.g. when asked what number comes directly after 8 8 8 , immediately responds with " 9 9 9 " without needing to count from one)
- continues a count starting from a number other than one

Perceptual counting

- interprets the count independently of the type of objects being counted (e.g. a quantity of 5 5 5 counters is the same quantity as 5 5 5 basketball courts)
- counts a collection, keeping track of items that have been counted and those that haven't been counted yet to ensure they are only counted exactly once (e.g. when asked to count a pile of blocks, moves each block to the side as it is counted)

Counting sequences

- uses knowledge of the counting sequence to determine the next number or previous number from any starting point within the range 1 – 100 1–100 1 – 1 0 0

Perceptual counting

- matches known numerals to collections of up to 20 20 2 0 , counting items using a one-to-one correspondence
- uses zero to denote when no objects are present (e.g. when asked "how many cards have you got?" and has no cards left, says "zero")
- counts objects in a collection independent of the order, appearance or arrangement (e.g. understands that counting 7 7 7 people in a row from left to right is the same as counting them from right to left)

Counting sequences

- continues counting from any number forwards and backwards beyond 100 100 1 0 0 using knowledge of place value
- counts in sequence by twos and fives starting at zero (e.g. counts items using number rhymes " 2 , 4 , 6 , 8 2, 4, 6, 8 2 , 4 , 6 , 8 Mary's at the cottage gate ..."; skip counts in fives as " 5 , 10 ,

15 , 20 5, 10, 15, 20 5 , 1 0 , 1 5 , 2 0 ")

- counts in sequence forwards and backwards by tens on the decade up to 100 100 1 0 0

Perceptual counting

- counts items in groups of twos, fives and tens (e.g. counts a quantity of 10 10 1 0 -cent pieces as 10 , 20 , 30 10, 20, 30 1 0 , 2 0 , 3 0 ... to give the total value of the coins; counts the number of students by twos when lined up in pairs)

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2ST01

Continuum extract

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- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Interacting

Literacy: Speaking and listening: Interacting

Content description

AC9M2ST01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

- contributes simple ideas and opinions to class or small group discussions
- shows signs of active listening, by sustaining attention across a short, spoken text
- shows beginning awareness of discussion conventions (e.g. pauses when another speaker starts)
- uses appropriate language or dialect to interact with speakers of the same language
- listens actively to stay on topic in a small group discussion
- takes an active role in small group and whole-class discussion by volunteering ideas and opinions
- asks relevant questions for clarification or to find out others' ideas (e.g. "What do you think about that?")
- takes turns in interactions
- interacts using appropriate language in pairs or a small group to complete tasks
- interacts to extend and elaborate ideas in a discussion (e.g. provides an additional example)
- presents simple ideas clearly in group situations
- actively encourages or supports other speakers
- shows awareness of discussion conventions (e.g. uses appropriate language to express agreement and disagreement in class discussions)
- uses language to initiate interactions in a small group situation (e.g. "I have an idea")

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2ST01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information

- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Acquire and collate data

Digital Literacy: Investigating: Acquire and collate data

Content description

AC9M2ST01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- collect data by counting, measuring and observing with familiar digital tools
- collect and access data using a range of digital tools and methods in response to a defined question

Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9M2ST01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- use simple digital tools to explore sorting data and information provided as part of learning experiences
- classify and group data using digital familiar tools to answer simple questions
- organise, summarise and visualise data using a range of digital tools to identify patterns and answer questions

Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

Content description

AC9M2ST01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- use simple digital tools to explore tasks and consolidate learning
- seek help when encountering a problem
- use familiar digital tools to complete tasks and consolidate learning
- attempt to solve a problem before seeking help
- select and use a range of digital tools to complete tasks
- attempt to solve a problem individually and with peers before seeking help

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9M2ST01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- draw conclusions and make choices when completing tasks and identify the reasons for choices made
- draw conclusions and make choices when completing tasks and explain the reasons for choices made
- draw conclusions and make choices when completing tasks, using observation and prior knowledge to provide reasons and construct arguments for choices made

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2ST01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic

- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Resource – WS03 - The most popular use of the play space

By the end of Year 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.■They describe and continue patterns that increase and decrease additively by a constant amount and identify missing elements in the pattern.■Students recall and demonstrate proficiency with addition and subtraction facts within 20 and multiplication facts for twos.

They use uniform informal units to measure and compare shapes and objects.■Students 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.■They compare and classify shapes, describing features using formal spatial terms.■Students locate and identify positions of features in two-dimensional representations and move position by following directions and pathways.

They use a range of methods to collect, record, represent and interpret categorical data in response to questions.

AC9M2ST01

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

AC9M2ST02

create different graphical representations of data using software where appropriate; compare the different representations, identify and describe common and distinctive features in response to questions

AC9M2ST02

create different graphical representations of using software where appropriate; compare the different representations, identify and describe common and distinctive features in response to questions

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-

Elaborations

- collecting from a limited list of choices, creating 2 2 2 different graphical representations of the , discussing and comparing the different representations; for example, asking the class to choose their favourite colour from a given , then co-creating a picture graph with colours on the horizontal axis and comparing to a with colours on the horizontal axis and numbers on the vertical axis
- creating different ; for example, lists, tally charts, jointly created and to represent a ; describing the information that each display represents and discussing how easy or hard they are to interpret and why
- using , including generative artificial intelligence tools, to create to represent using one-to-one correspondence, deciding on an appropriate title for the graph and considering whether the categories of are appropriate for the

- comparing with one-to-one of the same , interpreting the in each and saying how they are the same and how they are different; for example, collecting on the country of birth of each student and creating different pictographs to represent classroom
- using , sticker charts, , bar charts and to represent

Students learn to:

**create different graphical representations of data using software where appropriate
different representations, identify and describe common and distinctive features in
questions**

(AC9M2ST02)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Analysing

- Draw conclusions and provide reasons

Generating

- Consider alternatives

Inquiring

- Identify, process and evaluate information

Investigating

- Acquire and collate data
- Interpret data

Statistics and probability

- Interpreting and representing data

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Analysing

- Draw conclusions and provide reasons

Generating

- Consider alternatives

Inquiring

- Identify, process and evaluate information

Analysing

- Draw conclusions and provide reasons

Inquiring

- Identify, process and evaluate information

Analysing

- Draw conclusions and provide reasons

Inquiring

- Identify, process and evaluate information

Creating and exchanging

- Plan

Statistics and probability

- Interpreting and representing data

Analysing

- Draw conclusions and provide reasons

Generating

- Consider alternatives

Generating

- Consider alternatives

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9HS2S02

AC9HS2S03

AC9S2I04

Resources

Work Samples

WS03 - The most popular use of the play space

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9M2ST02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- draw conclusions and make choices when completing tasks and identify the reasons for choices made
- draw conclusions and make choices when completing tasks and explain the reasons for choices made
- draw conclusions and make choices when completing tasks, using observation and prior knowledge to provide reasons and construct arguments for choices made

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2ST02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- consider alternatives by suggesting a different way to approach a given task or problem
- consider alternatives and explore different or creative ways to approach a task or problem
- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2ST02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- identify and explore relevant points in information provided on a topic
- prioritise the information that is most relevant to the topic of study
- identify and explore relevant information from a range of sources, including visual information and digital sources
- identify and explain similarities and differences in selected information
- identify and examine relevant information and opinion from a range of sources, including visual information and digital sources
- condense and combine selected information related to the topic of study

Snapshot – Acquire and collate data

Digital Literacy: Investigating: Acquire and collate data

Content description

AC9M2ST02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- collect data by counting, measuring and observing with familiar digital tools
- collect and access data using a range of digital tools and methods in response to a defined question

Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9M2ST02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- use simple digital tools to explore sorting data and information provided as part of learning experiences
- classify and group data using digital familiar tools to answer simple questions
- organise, summarise and visualise data using a range of digital tools to identify patterns and answer questions

Snapshot – Interpreting and representing data

Numeracy: Statistics and probability: Interpreting and representing data

Content description

AC9M2ST02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Basic one-to-one data displays

- poses questions that could be investigated from a simple numerical or categorical data set (e.g. number of family members, types of pets, where people live)
- displays and describes one variable data in lists or tables
- communicates information through text, picture graphs and tables using numbers and symbols (e.g. creates picture graphs to display one-variable data)
- responds to questions and interprets general observations made about data represented in simple one-to-one data displays (e.g. responds to questions about the information represented in a simple picture graph that uses a one-to-one representation)

Collecting, displaying and interpreting categorical data

- designs survey questions to collect categorical data (e.g. creates a suite of survey questions to plan the end of year class party)
- collects, records and displays one-variable data in variety of ways such as tables, charts, plots and graphs using the appropriate digital tools (e.g. uses a spreadsheet to record data collected in a class survey and generates a column graph to display the results)
- displays and interprets categorical data in one-to-many data displays
- interprets and represents categorical data in simple displays such as bar and column graphs, pie charts, models, maps, colour wheels, and pictorial timelines, and makes simple inferences from such displays
- makes comparisons from categorical data displays using relative heights from a common baseline (e.g. compares the heights of the columns in a simple column graph to determine the tallest and recognises this as the most frequent response)

Collecting, displaying and interpreting numerical data

- collects and records discrete numerical data using an appropriate method for recording (e.g. uses a frequency table to record the experimental results for rolling a dice; records sample measurements taken during a science investigation)
- constructs graphical representations of numerical data and explains the difference between continuous and discrete data (e.g. explains that measurements such as length, mass and temperature are continuous data whereas a count such as the number of people in a queue is discrete)
- explains how data displays can be misleading (e.g. whether a scale should start at zero; not using uniform intervals on the axes)
- interprets visual representations of data displayed using a multi-unit scale, reading values between the marked units and describing any variation and trends in the data

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9M2ST02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- draw conclusions and make choices when completing tasks and identify the reasons for choices made
- draw conclusions and make choices when completing tasks and explain the reasons for choices made
- draw conclusions and make choices when completing tasks, using observation and prior knowledge to provide reasons and construct arguments for choices made

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2ST02

Continuum extract

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- consider alternatives by suggesting a different way to approach a given task or problem
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- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option

Snapshot – Identify, process and evaluate information

Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

Content description

AC9M2ST02

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Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

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Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

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Critical and Creative Thinking: Inquiring: Identify, process and evaluate information

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- condense and combine selected information related to the topic of study

Snapshot – Plan

Digital Literacy: Creating and exchanging: Plan

Content description

AC9M2ST02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- use simple digital tools to contribute to a basic plan to complete a task
- use familiar digital tools to develop and follow a basic plan to complete a task

Snapshot – Interpreting and representing data

Numeracy: Statistics and probability: Interpreting and representing data

Content description

AC9M2ST02

Learning progression extract

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- interprets visual representations of data displayed using a multi-unit scale, reading values between the marked units and describing any variation and trends in the data

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9M2ST02

Continuum extract

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Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2ST02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

- consider alternatives by suggesting a different way to approach a given task or problem
- consider alternatives and explore different or creative ways to approach a task or problem
- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9M2ST02

Continuum extract

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- consider alternatives and explore different or creative ways to approach a task or problem
- consider alternatives by comparing different or creative ways to approach a task, issue or problem and recommend a preferred option