Year 2 Mathematics
Curriculum and assessment plan

Example

Level description	Context and cohort considerations
In Year 2, learning in Mathematics builds on each student's prior learning and experiences. Students engage in a range of approaches to learning and doing mathematics that develop their understanding of and fluency with concepts, procedures and processes by making connections, reasoning, problem-solving and practice. Proficiency in mathematics enables students to respond to familiar and unfamiliar situations by employing mathematical strategies to make informed decisions and solve problems efficiently. Students further develop proficiency with positive dispositions towards mathematics and its use as they: • recognise that mathematics can be used to investigate things they are curious about, to solve practical problems and model everyday situations, describing their thinking and reasoning using familiar mathematical language • partition and combine numbers flexibly, recognising and describing the relationship between addition and subtraction and employing part-part-whole reasoning and relational thinking to solve additive problems • use number sentences to formulate additive situations and represent simple multiplicative situations using equal groups and arrays • use mathematical modelling to solve practical problems involving authentic situations by representing problems with physical and virtual materials, diagrams and using different calculation strategies to find solutions • compare and contrast related operations and use known addition and subtraction facts to develop strategies for unfamiliar calculations • recognise types of patterns in different contexts • partition collections, shapes and objects into equal parts and build a sense of fractions as a measure, connecting this to measures of turn and representations of time • use uniform units to measure, compare and discuss the attributes of shapes and objects, and the duration of events • describe spatial relationships such as the relative position of objects represented within a two dimensional space • build the foundations for statistical inquiry by choosing questions based on their interests as they collect, represent, and interpret data, and recognise features of different representations • develop a sense of equivalence, chance and variability when they engage in play-based and practical activities.	The Year 2 cohort participates in daily mathematics learning. This plan has considered: • summative and formative data from Year 1 showing the need to extend on students' emerging number understandings and calculation strategies • exploration and use of digital tools (e.g. virtual materials) in Number and Statistics, which supports the learning and doing of mathematics. Across the year, the contexts for teaching and learning create authentic learning experiences for students. Unit 1 provides opportunities to connect to the English learning area where students engage with the English texts as a springboard for mathematical learning and exploration.

Unit 1 — Tales and investigations	Unit 2 — Mathematics detectives	Unit 3 — Shopping problems	Unit 4 — Fraction discoveries
Duration: 10 weeks	**Duration: 10 weeks**	**Duration: 10 weeks**	**Duration: 10 weeks**
Guided investigations support students to engage in meaningful problems, by exploring familiar and unfamiliar situations and making connections between concepts. In this unit, through guided investigations, students explore place value, measurement and spatial concepts, drawing inspiration from picture books that provide contexts for mathematical wonderings, investigations and discoveries. In the first phase of this unit, students are immersed in picture books to guide and support their exploration of the concepts of mass, capacity and length. In response to the texts, students pose questions on the attributes of length, capacity and mass, e.g. How long is Rapunzel's hair? How tall are the different animals? How much stew can fit in the dingo's pot? Drawing upon their Measurement understandings from Year 1, students seek solutions to these questions by measuring and comparing objects using balance scales, physical materials, pictures and hefting objects. Throughout their investigations, students learn to use appropriate uniform informal units and smaller units for accuracy when necessary. In the second phase of this unit, students engage in hands-on learning experiences to investigate spatial contexts. They compare and classify shapes, sorting them into different groups based on their features, and describe these groupings using spatial terms such as 'opposite', 'parallel', 'curved', and 'straight'. Students then use picture books to examine location and directional language. They co-create a map from a book out of physical materials, e.g. the path from home through the woods to grandma's house. Within this designed space, students use informal units of length (e.g. matchsticks, paperclips) to move around, giving and following directions with a peer. Finally, in response to questions, students locate positions on a two-dimensional representation and follow directions and pathways. Evidence of learning from investigations throughout the unit is recorded in an investigation folio, e.g. drawings, photographs, videos, map, models. Throughout this unit, students also build on place value understanding from Year 1. They recognise, represent and order numbers to 1000 with physical and virtual materials. Picture books support students to consider the size of numbers. Standard partitioning activities support students to recognise the role of a zero digit in place value notation. Teachers make professional decisions to collect evidence of student place value understandings, at a point in time and on an ongoing basis, using observed demonstrations.	By taking on the role of detective, students are encouraged to think critically and creatively, use reasoning skills and communicate mathematically. In this unit, students build on place value understandings, explore number patterns and pose questions of interest to find solutions. In the first phase of this unit, students become number detectives, deepening their place value understandings from Unit 1. They order and represent numbers to at least 1000 using a variety of physical and virtual materials, drawings, numbers and diagrams. They recognise missing numbers on number lines and in hundred chart puzzles. Students use their place value understandings to rearrange and rename two- and three-digit numbers in terms of their parts. In the second phase of this unit, students pose questions on topics of interest to find out information about their classmates. They develop critical and creative thinking skills through the project as they gather information from a variety of sources, including surveys, observations and experiments. Students create representations, including lists, tables, and one-to-one picture graphs and column graphs and include representations created using digital tools. They apply number understandings to count data and make comparative statements on findings. In the third phase of this unit, students investigate patterns. They recognise and describe patterns that increase or decrease by a constant amount. They create additive patterns with materials and associate them with the number sequence so the pattern can be replicated and extended. Students think critically and creatively as they detect missing elements in patterns. Evidence of student learning is gathered and represented in a student learning journal, e.g. drawings, diagrams, photographs.	Mathematical modelling supports the development of critical and creative thinking skills as students are required to break the problems into parts to help them devise multiple possible solutions. In this unit, students use the mathematical modelling process to apply their understanding of place value to solve practical and financial problems within the context of a shop. In the first phase of this unit, students consolidate and extend their place value knowledge, understanding and skills from Units 1 and 2. They are supported to make the connection between physical, visual, spoken/signed and written models and are guided to develop proficiency with mental calculation strategies through games, activities and practice (e.g. using near doubles and bridging to 10 strategies) to partition, rearrange and regroup numbers. Students then use their understanding of addition facts to 20 to develop proficiency with related subtraction facts. They also develop proficiency with multiplication facts for twos and use doubling and halving to develop the related division facts. Students use ten frames, physical materials, part-part-whole diagrams and mental calculation strategies to make connections with the inverse relationships and explain the patterns. In the second phase of this unit, students apply number understandings to model practical and financial problems. Using hands-on experiences and the context of a shop, students problem-solve to find combinations of items they can purchase for a set amount (of whole dollars). They draw upon a range of strategies and the mathematical modelling process to find solutions. Strategies students use include partitioning numbers to help them in calculations, doubles and near doubles, and make to 10. Students develop fluency with the two facts through doubling and halving and demonstrate their proficiency with addition and subtraction facts through hands-on experiences. Number sentences and part-part-whole thinking are used to represent problems and explain the steps taken in solving. Evidence of student learning is collected in learning journals. Students demonstrate a range of strategies by using think boards, diagrams, physical materials, roleplay, written calculations and verbal explanations.	Mathematics is a process of discovery. In this unit, students apply critical and creative thinking skills as they explore fractional ideas, make choices when completing tasks and explain reasons for choices made. Understandings are deepened as students are supported to investigate a wide range of contexts and apply their understandings and skills. In the first phase of this unit, students draw on their understanding of doubling, halving and equal sharing from Unit 3. Through a variety of guided experiences, including sharing collections, partitioning shapes and objects into parts, students recognise and describe one-half as two equal parts of a whole. They create halves of a range of collections by sharing the physical materials into two equal groups and discussing the representations. Students connect this understanding of equal sharing and groups to quarters and eighths. They use repeated halving to equally split shapes and objects in different ways to make halves, quarters and eighths. Fractional understandings are deepened through engagement with the fraction area model. Students name parts, compare the size and are supported to notice that a quarter is half of a half and an eighth is a half of a quarter. In the second phase of this unit, fractional understandings are connected to measurement contexts. Students explore measures of turn by identifying things that turn in everyday situations in the school environment, e.g. tap handle and hands on a clock. They also connect fractional understandings to representations of time. Students create an analog clock from a paper plate, place the two hands on the clock and explain how long it takes each hand to move around the clock. They practise telling time on the physical analog clock to the hour, half-hour and quarter-hour, using their fractional understandings. Students also use a calendar to identify dates and determine the number of days between events. Evidence of student learning from this unit is collected through an end-of-term supervised assessment.

	Unit 1 — Tales and investigations		Unit 2 — Mathematics detectives		Unit 3 — Shopping problems		Unit 4 — Fraction discoveries	
	Assessment 1 — Observed demonstration	**Term/ week**	**Assessment 3 — Project**	**Term/ week**	**Assessment 4 — Project: Mathematical modelling**	**Term/ week**	**Assessment 5 — Supervised assessment**	**Term/ week**
Assessment	**Description:** Through practical tasks (e.g. demonstrations that involve the manipulation of physical and virtual materials, teacher–student conferences, group discussions and sharing of ideas and thinking), students demonstrate their proficiency when ordering and representing numbers to at least 1000. They apply knowledge of place value to partition two- and three-digit numbers in terms of their parts. **Technique:** Observed demonstration **Mode:** Spoken/signed and practical with physical materials **Conditions:** • started in Week 3 and completed over multiple lessons by end of Week 9 • may be completed in small groups • practical components are observed by the teacher	Term 1 Week 9	**Description:** Through a learning journal (e.g. drawings, photographs/diagrams), students document their mathematics discoveries. They demonstrate proficiency when: • ordering and representing numbers to at least 1000, applying knowledge of place value to partitioning and rearranging two- and three-digit numbers in terms of their parts • describing and continuing patterns that increase and decrease additively by a constant amount and identifying missing elements in the pattern • collecting, recording, representing and interpreting categorical data in response to questions. **Technique:** Project **Mode:** Multimodal (written and practical with physical materials) **Conditions:** • started in Week 2 and completed over multiple lessons by end of Week 8 • practical components are observed by the teacher	Term 2 Week 8	**Description:** Students keep a learning journal (e.g. drawings, photographs, written calculations, video explanations, think boards) to record strategies and solutions to a series of tasks within the context of a class shop. Students use mathematical modelling to solve practical additive and multiplicative problems, including money transactions. Students recall addition and subtraction facts within 20 and multiplication facts for twos and apply knowledge of place value to partition to regroup partitioned numbers to assist in calculations. **Technique:** Project **Mode:** Multimodal (written and practical with physical materials) **Conditions:** • started in Week 7 and completed over multiple lessons by end of Week 10 • practical components are observed by the teacher	Term 3 Week 10	**Description:** Students answer short response questions that involve: • identifying and representing part-whole relationships of halves, quarters and eighths in measurement contexts • determining the number of days between events using a calendar • reading time on an analog clock to the hour, half-hour and quarter-hour. **Technique:** Supervised assessment **Mode:** Written and practical with physical materials, e.g. calendars and student clocks **Conditions:** • may be completed one-on-one, in small groups or in whole class settings • may be completed over multiple lessons or broken into components in Week 7 • practical components are observed by the teacher	Term 4 Week 7
	Assessment 2 — Project **Description:** Through an investigation folio, a collection of annotated responses from practical investigations is collated. The investigation folio shows evidence of students' learning, focusing on: • comparing and classifying shapes, describing features using spatial terms • using uniform informal units to compare shapes and objects • locating and identifying positions of features in two-dimensional representations (co-created map from a book) • moving position by following directions and pathways using uniform informal units to measure. **Technique:** Project **Mode:** Multimodal (written, spoken/signed and practical with physical materials) **Conditions:** • started in Week 5 and completed over multiple lessons by end of Week 7 • practical components are observed by the teacher	Term 1 Week 7							

	Unit 1 — Tales and investigations	Unit 2 — Mathematics detectives	Unit 3 — Shopping problems	Unit 4 — Fraction discoveries
Achievement standard	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.	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.	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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.	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. 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Moderation	**Consensus:** Refer to QCAA moderation advice on the QCAA website under the Assessment tab in the learning area.	**Expert:** Refer to QCAA moderation advice on the QCAA website under the Assessment tab in the learning area.	**Consensus:** Refer to QCAA moderation advice on the QCAA website under the Assessment tab in the learning area.	**Calibration:** Refer to QCAA moderation advice on the QCAA website under the Assessment tab in the learning area.

Content descriptions	Units				Content descriptions	Units				Content descriptions	Units			
Number	**1**	**2**	**3**	**4**	**Algebra**	**1**	**2**	**3**	**4**	**Measurement**	**1**	**2**	**3**	**4**
recognise, represent and order numbers to at least 1000 using physical and virtual materials, numerals and number lines AC9M2N01	☑	☑	☐	☐	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	☐	☑	☐	☐	measure and compare objects based on length, capacity and mass using appropriate uniform informal units and smaller units for accuracy when necessary AC9M2M01	☑	☐	☐	☐
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 AC9M2N02	☑	☑	☐	☐	recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts AC9M1A02	☐	☐	☑	☐	identify common uses and represent halves, quarters and eighths in relation to shapes, objects and events AC9M2M02	☐	☐	☐	☑
recognise and describe one-half as one of 2 equal parts of a whole and connect halves, quarters and eighths through repeated halving AC9M2N03	☐	☐	☐	☑	recall and demonstrate proficiency with multiplication facts for twos; extend and apply facts to develop the related division facts using doubling and halving AC9M2A03	☐	☐	☑	☐	identify the date and determine the number of days between events using calendars AC9M2M03	☐	☐	☐	☑
add and subtract one- and two-digit numbers, representing problems using number sentences, and solve using part-part-whole reasoning and a variety of calculation strategies AC9M2N04	☐	☐	☑	☐						recognise and read the time represented on an analog clock to the hour, half-hour and quarter-hour AC9M2M04	☐	☐	☐	☑
multiply and divide by one-digit numbers using repeated addition, equal grouping, arrays, and partitioning to support a variety of calculation strategies AC9M2N05	☐	☐	☑	☐						identify, describe and demonstrate quarter, half, three-quarter and full measures of turn in everyday situations AC9M2M05	☐	☐	☐	☑
use mathematical modelling to solve practical problems involving additive and multiplicative situations, including money transactions; represent situations and choose calculation strategies; interpret and communicate solutions in terms of the situation AC9M2N06	☐	☐	☑	☐										

Content descriptions	Units				Content descriptions	Units			
Space	**1**	**2**	**3**	**4**	**Statistics**	**1**	**2**	**3**	**4**
recognise, compare and classify shapes, referencing the number of sides and using spatial terms such as “opposite”, “parallel”, “curved” and “straight” AC9M2SP01	☑	☐	☐	☐	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 AC9M2ST01	☐	☑	☐	☐
locate positions in two dimensional representations of a familiar space; move positions by following directions and pathways AC9M2SP02	☑	☐	☐	☐	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	☐	☑	☐	☐

General capabilities	Units			
	1	2	3	4
Critical and creative thinking	☑	☑	☑	☑
Digital literacy	☐	☑	☐	☐
Ethical understanding	☐	☐	☐	☐
Intercultural understanding	☐	☐	☐	☐
Literacy	☑	☐	☐	☐
Numeracy	☑	☑	☑	☑
Personal and social capability	☐	☐	☐	☐

Cross-curriculum priorities	Units			
	1	2	3	4
Aboriginal and Torres Strait Islander histories and cultures	☐	☐	☐	☐
Asia and Australia's engagement with Asia	☐	☐	☐	☐
Sustainability	☐	☐	☐	☐