ACiQ v9.0

Year 3 Mathematics Curriculum and assessment plan

Example

Level description

In Year 3, 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 and positive dispositions towards mathematics and its use as they:

- become increasingly aware of the usefulness of mathematics to model situations and solve practical problems
- recognise that mathematics has conventions and language enabling the unambiguous communication of ideas and results
- experience the power of being able to manipulate numbers using a range of strategies that are based on proficiency with single-digit addition facts and their understanding of place value in the base 10 number system, partitioning and regrouping
- begin to apply their understanding of algorithms and technology to experiment with numbers and recognise patterns
- develop, extend and apply their addition and multiplication facts and related facts for subtraction and division through recognising connections between operations and develop automaticity for 3, 4, 5 and 10 multiplication facts through games and meaningful practice
- learn to formulate, choose and use calculation strategies, communicating their solutions within a modelling context
- use metric units to measure and compare objects and events
- recognise the relationship between dollars and cents and learn to represent money values in different ways
- · determine key features of objects and spaces, and use these when they build models and spatial representations
- undertake, with guidance, statistical investigations that are meaningful to them, making decisions about their use and representation of categorical and discrete numerical data and reporting findings
- develop a qualitative understanding of chance and use the language of chance to describe and compare the outcomes of familiar chance events
- become increasingly able to understand that different outcomes can be the results of random processes.

Context and cohort considerations

The Year 3 cohort participates in daily mathematics learning. This plan has considered:

- summative and formative data from Year 2 showing the need to support and extend on students' emerging partitioning and part-whole understandings
- timing of NAPLAN in Term 1
- exploration and use of digital tools (e.g. virtual material, electronic devices, software programs) in relevant contexts, 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 an opportunity to connect to The Arts (Visual Art) learning area and Unit 2 makes connections to the Technologies (Design and Technologies) learning area. In Unit 3, the school fete is used as a context for exploring mathematical problems.



Unit 1 — The beauty of Maths Unit 3 — Fun at the fete Unit 2 — Designing a play space Unit 4 — Piecing it together **Duration: 10 weeks Duration: 10 weeks Duration: 10 weeks Duration: 10 weeks** Mathematics has its own beauty and value. It is present in Mathematics supports learners to develop critical and Real-world, practical investigations provide students with Mathematical understanding is strengthened when students nature, structures and buildings and artworks. Appreciating creative thinking, problem-solving and design thinking opportunities to explore the usefulness and value of make connections between concepts and apply their mathematics and identifying connections between skills. In this unit, students are provided with the opportunity mathematics learning. In this unit, students engage in realunderstandings to familiar and unfamiliar situations. Mathematics and other learning areas or subjects, helps to apply these skills in creative ways when seeking world applications and problem-solving situations within the Throughout this unit, students progressively build upon students recognise the usefulness of mathematics in their solutions. context of a school fete. Students deepen their number their prior knowledge as they engage in exploring practical world. This unit provides the context for those learnings. understandings, and develop proficiency with time and scenarios that connect concepts such as multiplication, In the first phase of this unit, students deepen their money concepts through hands-on learning experiences. division, fractions, mass, capacity and chance experiments. In the first phase of this unit, students revise and understandings of natural numbers from Unit 1 to explore consolidate place value understandings from Year 2. They numbers beyond 10 000. Critical and creative thinking skills In this unit, through the context of the school fete, students In the first phase of this unit, students expand upon the are encouraged to notice numbers and consider 'how are deepened as students expand on their understanding develop proficiency with concepts, skills and procedures, experiences in Unit 3 to explore practical situations of Number by ordering and representing numbers in new and make connections in order to solve problems and involving single-digit multiplication and division. Students many' in a range of contexts. Students explore the pattern and structure of the place value system, looking at the and creative ways, e.g. renaming numbers and exploring communicate their solutions. Students roleplay stall holders recall multiplication facts for twos, threes, fours, fives and repeating pattern of place value names and spaces. Using patterns in place value names and spaces. Students to investigate financial and practical problems. They use tens, using a range of strategies. They make connection to concrete materials to recognise the relationship between this knowledge, students predict numbers in sequences, engage with picture books that explore the notion of how the part-part-whole model to visually represent the order numbers and represent numbers in multiple ways, big numbers are, the pattern of the place value system and dollars and cents and represent money in different ways. component parts. They also use number sentences, diagrams, arrays, think boards and concrete materials to e.g. in games, stories, discussions, with physical materials, quantification of number. Evidence of student learning is They extend on number understandings from Units 1 and 2 using numerals, number lines, number charts. They collected through a learning journal where students to add and subtract two- and three-digit numbers, using represent problems in a variety of ways and deepen their partition, rename and regroup two- and three-digit numbers respond to a number talk and represent a natural number place value and partitioning to assist in calculations. understanding of calculation strategies. Students then and investigate the connection between addition and beyond 10 000 in multiple ways. They then provide a short Students apply partitioning understandings and additive revise and consolidate fractional understandings from subtraction as inverse operations. Students continue to spoken/signed explanation of their representations. strategies to model and solve practical problems for the Year 2 and extend on that knowledge to represent unit deepen Number understandings as they explore patterns in fete, selling items and calculating change. In preparation for fractions and their multiples in different ways. In hands-on In the second phase of this unit, students develop problemnumber sequences. They partition numbers using the school fete students also explore the relationship experiences, they cut objects into equal parts and share solving and design thinking skills as they connect their materials, part-part-whole diagrams and number sentences between formal units of time including days, hours, minutes collections of objects evenly into groups. They demonstrate Mathematics and Design and Technologies knowledge, and find unknown values. They create algorithms to show the connection between parts and the whole, and the and seconds. They read and connect analog and digital understanding and skills. In this project, students are understanding of number sequences and identify patterns. times, using the language of time, and represent times on connection of fractions to division. The notion of parts and presented with the opportunity to design their own play Evidence of student learning is collected through a an analog clock, using the markings and positions of the wholes is then explored in the context of mass and space. Building on from Unit 1, students explore supervised assessment. hands to the nearest minute. Students estimate and capacity. Students use familiar metric units when mathematics in their everyday life and consider its compare duration of events, planning a sequence of estimating and measuring the attributes of mass and In the second phase of the unit, students deepen their usefulness in helping them seek a solution to a real-life activities they would like to participate in at the school fete. capacity of everyday items and objects. They compare the appreciation of the beauty of mathematics by connecting context. In order to make informed decisions about size masses of collections of items and individual items, and their learning to a Visual Arts context. Students are inspired and scale, students develop an understanding of formal Evidence of student learning from this unit will be collected compare capacities of various containers using measuring by Picasso's wooden sculptures, investigating objects and units of measure to explore play spaces in their school through a proposal where students identify a plan for the jugs, cups and scales with labelled markings. angles and identifying and discussing key features. environment. They create calibrated scales and connect day to share with parents and/or caregivers. Students Students make objects with connecting cubes, plasticine or their understandings to centimetres and metres. Students record an itinerary, identifying times, activities, costing and In a supervised assessment, students model solutions to straws and compare the different representations. They estimation of how long each activity will take. They include use trundle wheels and metre paper strips to estimate and problems using materials, diagrams and number identify angles as a measure of turn, explore angles in measure the length of play spaces. Students then conduct their calculations using number sentences, calculation sentences. They demonstrate mathematical skills while everyday situations and compare angles to right angles. a guided statistical investigation, developing questions to exploring the practical applications of single-digit strategies and use estimation to check the reasonableness Students then use familiar shapes and objects to build their investigate features of play spaces. They use lists, tables of calculations. multiplication and division, unit fractions and attributes of own sculpture using available materials. Students describe and tallies to record data and display the results in column mass and capacity. the objects within their sculpture using key features and graphs. Students use digital tools to record and represent In the second phase of this unit, students explore the notion identify angles within their sculpture, comparing them to a their data. The results from the investigation are used to of fairness through a series of provocations. Students use right angle. Critical and creative thinking skills are inform their play space designs. Students consider the practical activities and observations to identify and discuss encouraged as students analyse representations and placement of a play space in the school. They create a twothe likelihood of outcomes using terms such as 'likely', identify and make connections between mathematical dimensional representation of their school environment 'unlikely', 'certain' and 'impossible'. Critical and creative from a top view perspective, identifying key landmarks and understandings and their sculpture. The sculpture and thinking skills are strengthened as students identify written description form part of students' investigation folio incorporating their play space design ideas. They swap relationships between observations and the likelihood of for this unit. their maps with a partner, interpreting their design and outcomes. Students conduct repeated chance experiments providing feedback on the features. Evidence of learning involving dice, spinners or counters, record the results and will be collected in an investigation folio to accompany their discuss the outcomes. Students keep a record of their Design and Technologies project folio.

Year 3 Mathematics curriculum and assessment plan

Example

November 2024

observations and findings in a learning journal.



Unit 1 — The beauty of Maths		Unit 2 — Designing a play space		Unit 3 — Fun at the fete		Unit 4 — Piecing it together	
	Term/ week	Assessment 3 — Project	Term/ week	Assessment 5 — Project	Term/ week	Assessment 6 — Supervised assessment involving mathematical modelling	Term/ week
	Term 1 Week 7	Description: In response to a teacher-provided number talk, students represent and order natural numbers beyond 10 000 in different ways in their learning journal, e.g. drawings, photographs/diagrams, written descriptions. Students then provide a short spoken/signed explanation of their representations. Technique: Project Mode: Multimodal (written and spoken/signed) Conditions: completed in Week 3 multimodal responses up to 1 minute	Term 2 Week 3	Description: Students plan a fun day at the fete to share with their parents and/or caregivers in a written itinerary. Students propose an itinerary of activities with times, approximate durations and costing associated with the activities. They use number sentences to record calculations and estimation strategies to check the reasonableness of calculations. Technique: Project Mode: Written Conditions: • started in Week 8 and completed over multiple lessons by end of Week 9 • written responses up to 200 words	Term 3 Week 9	 Description: Students respond to questions, scenarios or problems that involve: using mathematical modelling to solve practical problems involving single-digit multiplication and division recalling multiplication facts for twos, threes, fours, fives and tens and using a range of strategies representing unit fractions and their multiples in different ways using familiar metric units when estimating, comparing and measuring the attributes of objects. Technique: Supervised assessment Mode: Written and practical with scaled instruments Conditions: up to 40 minutes, plus 5 minutes perusal and/or planning time may be completed over multiple lessons or broken into components in Week 6 practical responses are observed by the teacher 	Term 4 Week 6



	Unit 1 — The beauty of Maths		Unit 2 — Designing a play space		Unit 3 — Fun at the fete	Unit 4 — Piecing it together	
	Assessment 2 — Project	Term/ week	Assessment 4 — Project involving a statistical investigation (guided)	Term/ week		Assessment 7 — Project: Probability experiment	Term/ week
	Description: As part of the unit's connection to Visual Arts, students create a sculpture using familiar shapes and objects and record a written description in an investigation folio. Students identify, compare and classify objects within their sculpture and describe key features. They identify and compare angles	Term 1 Week 10	Description: Throughout this unit, as students investigate play spaces and create design ideas, a series of artefacts and representations are collected in an investigation folio. The investigation folio shows evidence of students' proficiency when:	Term 2 Week 9		Description: Through a learning journal (e.g. drawings, photographs/diagrams, written descriptions), students record reflections and observations from practical chance experiments. The journal shows annotated samples of students' learning, focusing on:	Term 4 Week 8
	within their sculpture to a right angle. Students record their description and use labelled diagrams and drawings (or annotated photos) to support their explanation.		 using familiar metric units when estimating, comparing and measuring the attribute of length in play spaces interpreting and creating two-dimensional 			using practical activities, observations and experiments to identify and describe outcomes and the likelihood of everyday events, explaining reasoning	
	Technique: Project		representations of familiar environments in the play space design			 conducting repeated chance experiments and discussing variation in results. 	
Hent	Mode: Multimodal (written and practical) Conditions:		 conducting guided statistical investigations involving categorical and discrete numerical 			Technique: Project Mode: Multimodal (written and practical)	
ssessment	started in Week 8 and completed over multiple lessons by end of Week 10		datainterpreting their results in terms of the			Conditions:	
Ž	written responses up to 200 words		context			 completed over multiple lessons in Week 8 written responses up to 200 words 	
	practical components are observed by the teacher		 recording, representing and comparing data they have collected. 			practical components are observed by the	
		Technique: Project		teacher			
			Mode: Multimodal (written and practical with scaled instruments)				
			Conditions:				
			 started in Week 4 and completed over multiple lessons by end of Week 9 				
			written responses up to 200 words				
			practical components are observed by the teacher				

	Unit 1 — The beauty of Maths	Unit 2 — Designing a play space	Unit 3 — Fun at the fete	Unit 4 — Piecing it together
Achievement standard	By the end of Year 3, students order and represent natural numbers beyond 10 000. They partition, rearrange and regroup two- and three-digit numbers in different ways to assist in calculations. Students extend and use single-digit addition and related subtraction facts and apply additive strategies to model and solve problems involving two- and three-digit numbers. They use mathematical modelling to solve practical problems involving single-digit multiplication and division, recalling multiplication facts for twos, threes, fours, fives and tens, and using a range of strategies. Students represent unit fractions and their multiples in different ways. They make estimates and determine the reasonableness of financial and other calculations. Students find unknown values in number sentences involving addition and subtraction. They create algorithms to investigate numbers and explore simple patterns. Students use familiar metric units when estimating, comparing and measuring the attributes of objects and events. They identify angles as measures of turn and compare them to right angles. Students estimate and compare measures of duration using formal units of time. They represent money values in different ways. Students make, compare and classify objects using key features. They interpret and create two-dimensional representations of familiar environments. Students conduct guided statistical investigations involving categorical and discrete numerical data, and interpret their results in terms of the context. They record, represent and compare data they have collected. Students use practical activities, observation or experiment to identify and describe outcomes and the likelihood of everyday events explaining reasoning. They conduct repeated chance experiments and discuss variation in results.	By the end of Year 3, students order and represent natural numbers beyond 10 000. 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Moderation	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.	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.

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Content descriptions		Un	its		Content descriptions		Un	nits		Content descriptions		Un	its	
Number	1	2	3	4	Algebra	1	2	3	4	Measurement	1	2	3	4
recognise, represent and order natural numbers using naming and writing conventions for numerals beyond 10 000 AC9M3N01	Ø	Ø			recognise and explain the connection between addition and subtraction as inverse operations, apply to partition numbers and find unknown values in number sentences AC9M3A01	Ø				identify which metric units are used to measure everyday items; use measurements of familiar items and known units to make estimates AC9M3M01		Ø		Ø
recognise and represent unit fractions including $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$ and their multiples in different ways; combine fractions with the same denominator to complete the whole AC9M3N02				Ø	extend and apply knowledge of addition and subtraction facts to 20 to develop efficient mental strategies for computation with larger numbers without a calculator AC9M3A02			Ø		measure and compare objects using familiar metric units of length, mass and capacity, and instruments with labelled markings AC9M3M02		V		Ø
add and subtract two- and three-digit numbers using place value to partition, rearrange and regroup numbers to assist in calculations without a calculator AC9M3N03			V		recall and demonstrate proficiency with multiplication facts for 3, 4, 5 and 10; extend and apply facts to develop the related division facts AC9M3A03				V	recognise and use the relationship between formal units of time including days, hours, minutes and seconds to estimate and compare the duration of events AC9M3M03			V	
multiply and divide one- and two-digit numbers, representing problems using number sentences, diagrams and arrays, and using a variety of calculation strategies AC9M3N04				V						describe the relationship between the hours and minutes on analog and digital clocks, and read the time to the nearest minute AC9M3M04			V	
estimate the quantity of objects in collections and make estimates when solving problems to determine the reasonableness of calculations AC9M3N05			Ø							identify angles as measures of turn and compare angles with right angles in everyday situations AC9M3M05	Ø			
use mathematical modelling to solve practical problems involving additive and multiplicative situations including financial contexts; formulate problems using number sentences and choose calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation AC9M3N06			Ø	V						recognise the relationships between dollars and cents and represent money values in different ways AC9M3M06			Ø	
follow and create algorithms involving a sequence of steps and decisions to investigate numbers; describe any emerging patterns AC9M3N07	V													



Content descriptions		Ur	nits		Content descriptions		Ur	nits		Content descriptions		Units		
Space	1	2	3	4	Statistics	1	2	3	4	Probability		2	3	4
make, compare and classify objects, identifying key features and explaining why these features make them suited to their uses AC9M3SP01	V				acquire data for categorical and discrete numerical variables to address a question of interest or purpose by observing, collecting and accessing data sets; record the data using appropriate methods including frequency tables and spreadsheets AC9M3ST01		V			identify practical activities and everyday events involving chance; describe possible outcomes and events as 'likely' or 'unlikely' and identify some events as 'certain' or 'impossible' explaining reasoning AC9M3P01				Ø
interpret and create two dimensional representations of familiar environments, locating key landmarks and objects relative to each other AC9M3SP02		Ø			create and compare different graphical representations of data sets including using software where appropriate; interpret the data in terms of the context AC9M2ST02		V			conduct repeated chance experiments; identify and describe possible outcomes, record the results, recognise and discuss the variation AC9M3P02				V
					conduct guided statistical investigations involving the collection, representation and interpretation of data for categorical and discrete numerical variables with respect to questions of interest AC9M3ST03		Ø							

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

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

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