Prep–Year 10 Mathematics

Australian Curriculum Version 9.0: Sequence of achievement standard aspects

This resource provides a sequence of achievement standards for Prep–Year 10 Mathematics, separated into aspects and organised by the elements and sub-elements of the Numeracy general capability.

By aligning aspects of the achievement standard to the Numeracy progression, teachers can see a logical sequence of mathematical concepts from Prep–Year 10.

This supports teachers to:

- plan for the range of student abilities within a single year level
- determine appropriate curriculum access points for students working above or below year level
- plan teaching, learning and assessment for students in multi-age classrooms
- better understand aspects of achievement standards through consideration of where they are introduced, their progression and where they conclude.

* indicates duplicated achievement standard aspect

		Prep Students:	Year 1 Students:	Year 2 Students:	Year 3 Students:	Year 4 Students:	Year 5 Students:	Year 6 Students:	Year 7 Students:	Year 8 Students:	Year 9 Students:	Year 10 Students:
Number sense and algebra	Number and place value	make connections between number names, numerals and position in the sequence of numbers from zero to at least 20 partition and combine collections up to 10 in different ways, representing these with numbers* compare the size of collections to at least 20* represent practical situations that involve quantifying, equal sharing, adding to and taking away from collections to at least 10* use subitising and counting strategies to quantify collections* collect, sort and compare data in response to questions in familiar contexts*	connect number names, numerals and quantities, and order numbers to at least 120 demonstrate how one- and two-digit numbers can be partitioned in different ways and that two-digit numbers can be partitioned into tens and ones* partition collections into equal groups and skip count in twos, fives or tens to quantify collections to at least 120* solve problems involving addition and subtraction of numbers to 20 and use mathematical modelling to solve practical problems involving addition, subtraction, equal sharing and grouping, using calculation strategies* collect and record categorical data, create one-to-one displays, and compare and discuss the data using frequencies*	order and represent numbers to at least 1000, apply knowledge of place value to partition, rearrange and rename two- and three-digit numbers in different ways to assist in calculations* use mathematical modelling to solve practical additive and multiplicative problems, including money transactions, representing the situation and choosing calculation strategies* recall and demonstrate proficiency with addition and subtraction facts within 20 and multiplication facts for twos*	order and represent natural numbers beyond 10 000 partition, rearrange and regroup two- and three-digit numbers in different ways to assist in calculations* 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* 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* make estimates and determine the reasonableness of financial and other calculations* create algorithms to investigate numbers and explore simple patterns*	use their understanding of place value to represent tenths and hundredths in decimal form and to multiply natural numbers by multiples of 10* use mathematical modelling to solve financial and other practical problems, formulating the problem using number sentences, solving the problem choosing efficient strategies and interpreting results in terms of the situation* use their proficiency with addition and multiplication facts to add and subtract, multiply and divide numbers efficiently* recognise equivalent fractions and make connections between fraction and decimal notations* choose rounding and estimation strategies to determine whether results of calculations are reasonable*	use place value to write and order decimals including decimals greater than one represent common percentages and connect them to their fraction and decimal equivalents*	use integers to represent points on a number line and in the Cartesian plane* use all 4 operations with decimals and connect decimal representations of measurements to the metric system* solve problems involving finding a fraction, decimal or percentage of a quantity and use estimation to find approximate solutions to problems involving rational numbers and percentages* locate an ordered pair in any one of the 4 quadrants on the Cartesian plane*	represent natural numbers in expanded form and as products of prime factors, using exponent notation* solve problems involving addition and subtraction of integers* use all 4 operations in calculations involving positive fractions and decimals, choosing efficient calculation strategies* choose between equivalent representations of rational numbers and percentages to assist in calculations* use mathematical modelling to solve practical problems involving rational numbers, percentages and ratios, in financial and other applied contexts, justifying choices of representation*	recognise irrational numbers and terminating or recurring decimals* solve problems involving the 4 operations with integers and positive rational numbers* use mathematical modelling to solve practical problems involving ratios, percentages and rates in measurement and financial contexts* use appropriate metric units when solving measurement problems involving the perimeter and area of composite shapes, and volume of right prisms* use formulas to solve problems involving the area and circumference of circles*	express small and large numbers in scientific notation* recognise and use rational and irrational numbers to solve problems*	This aspect of the achievement standard concludes in Year 9.

		Prep Students:	Year 1 Students:	Year 2 Students:	Year 3 Students:	Year 4 Students:	Year 5 Students:	Year 6 Students:	Year 7 Students:	Year 8 Students:	Year 9 Students:	Year 10 Students:
	Counting processes	partition and combine collections up to 10 in different ways, representing these with numbers*	partition collections into equal groups and skip count in twos, fives or tens to quantify collections to at least 120*	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*	partition, rearrange and regroup two- and three-digit numbers in different ways to assist in calculations*	count and represent fractions on a number line*	conduct repeated chance experiments, list the possible outcomes, estimate likelihoods and make comparisons between those with and without equally likely outcomes*	This aspect of the achievement standard concludes in Year 5.				
		compare the size of collections to at least 20*	use numbers, symbols and objects to create skip counting and repeating patterns, identifying the repeating unit*									
		represent practical situations that involve quantifying, equal sharing, adding to and taking away from collections to at least 10*	measure the length of shapes and objects using uniform informal units*									
		use subitising and counting strategies to quantify collections*	collect and record categorical data, create one-to-one displays, and compare and discuss the data using frequencies*									
		collect, sort and compare data in response to questions in familiar contexts*										
	Additive strategies	represent practical situations that involve quantifying, equal sharing, adding to and taking away from collections to at least 10*	demonstrate how one- and two-digit numbers can be partitioned in different ways and that two-digit numbers can be partitioned into tens and ones*	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*	partition, rearrange and regroup two- and three-digit numbers in different ways to assist in calculations*	use mathematical modelling to solve financial and other practical problems, formulating the problem using number sentences, solving the problem choosing efficient strategies and interpreting results in terms of the situation*	order and represent, add and subtract fractions with the same or related denominators*	solve problems involving finding a fraction, decimal or percentage of a quantity and use estimation to find approximate solutions to problems involving rational numbers and percentages*	solve problems involving addition and subtraction of integers*	solve problems involving the 4 operations with integers and positive rational numbers*	This aspect of the achievement standard concludes in Year 8.	
		use subitising and counting strategies to quantify collections*	solve problems involving addition and subtraction of numbers to 20 and use mathematical modelling to solve practical problems involving addition, subtraction, equal sharing and grouping, using calculation strategies*	use mathematical modelling to solve practical additive and multiplicative problems, including money transactions, representing the situation and choosing calculation strategies*	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*	use their proficiency with addition and multiplication facts to add and subtract, multiply and divide numbers efficiently*	use mathematical modelling to solve financial and other practical problems, formulating and solving problems, choosing arithmetic operations and interpreting results in terms of the situation*	use mathematical modelling to solve financial and other practical problems involving percentages and rational numbers, formulating and solving the problem, and justifying choices*	represent natural numbers in expanded form and as products of prime factors, using exponent notation*	use mathematical modelling to solve practical problems involving ratios, percentages and rates in measurement and financial contexts*		
				describe and continue patterns that increase and decrease additively by a constant amount and identify missing elements in the pattern*	make estimates and determine the reasonableness of financial and other calculations*	follow and create algorithms that generate sets of numbers and identify emerging patterns*		use all 4 operations with decimals and connect decimal representations of measurements to the metric system*	use all 4 operations in calculations involving positive fractions and decimals, choosing efficient calculation strategies*	use appropriate metric units when solving measurement problems involving the perimeter and area of composite shapes, and volume of right prisms*	
				recall and demonstrate proficiency with addition and subtraction facts within 20 and multiplication facts for twos*	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*	find unknown values in numerical equations involving addition and subtraction*		order common fractions, giving reasons, and add and subtract fractions with related denominators*	choose between equivalent representations of rational numbers and percentages to assist in calculations*	use formulas to solve problems involving the area and circumference of circles*	
					find unknown values in number sentences involving addition and subtraction*			find unknown values in numerical equations involving combinations of arithmetic operations*	use mathematical modelling to solve practical problems involving rational numbers, percentages and ratios, in financial and other applied contexts, justifying choices of representation*		

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Multiplicative strategies	represent practical situations that involve quantifying, equal sharing, adding to and taking away from collections to at least 10*	solve problems involving addition and subtraction of numbers to 20 and use mathematical modelling to solve practical problems involving addition, subtraction, equal sharing and grouping, using calculation strategies*	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* use mathematical modelling to solve practical additive and multiplicative problems, including money transactions, representing the situation and choosing calculation strategies* recall and demonstrate proficiency with addition and subtraction facts within 20 and multiplication facts for twos*	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*	use their proficiency with addition and multiplication facts to add and subtract, multiply and divide numbers efficiently* use the properties of odd and even numbers use their understanding of place value to represent tenths and hundredths in decimal form and to multiply natural numbers by multiples of 10* use mathematical modelling to solve financial and other practical problems, formulating the problem using number sentences, solving the problem choosing efficient strategies and interpreting results in terms of the situation* follow and create algorithms that generate sets of numbers and identify emerging patterns*	express natural numbers as products of factors and identify multiples use their proficiency with multiplication facts and efficient calculation strategies to multiply large numbers by one- and two-digit numbers and divide by single-digit numbers* use mathematical modelling to solve financial and other practical problems, formulating and solving problems, choosing arithmetic operations and interpreting results in terms of the situation* apply properties of numbers and operations to find unknown values in numerical equations involving multiplication and division* create and use algorithms to identify and explain patterns in the factors and multiples of numbers*	solve problems using the properties of prime, composite and square numbers solve problems involving finding a fraction, decimal or percentage of a quantity and use estimation to find approximate solutions to problems involving rational numbers and percentages* use mathematical modelling to solve financial and other practical problems involving percentages and rational numbers, formulating and solving the problem, and justifying choices* find unknown values in numerical equations involving combinations of arithmetic operations*	solve problems involving squares of numbers and square roots of perfect square numbers represent natural numbers in expanded form and as products of prime factors, using exponent notation* use all 4 operations in calculations involving positive fractions and decimals, choosing efficient calculation strategies* choose between equivalent representations of rational numbers and percentages to assist in calculations* use mathematical modelling to solve practical problems involving rational numbers, percentages and ratios, in financial and other applied contexts, justifying choices of representation*	apply the exponent laws to calculations with numbers involving positive integer exponents solve problems involving the 4 operations with integers and positive rational numbers* use mathematical modelling to solve practical problems involving ratios, percentages and rates in measurement and financial contexts* use appropriate metric units when solving measurement problems involving the perimeter and area of composite shapes, and volume of right prisms* use formulas to solve problems involving the area and circumference of circles* use Pythagoras' theorem to solve measurement problems involving unknown lengths of right-angle triangles*	extend and apply the exponent laws with positive integers to variables express small and large numbers in scientific notation*	interpret and use logarithmic scales representing small or large quantities or change in applied contexts identify the impact of measurement errors on the accuracy of results*
Interpreting fractions	This aspect of the achievement standard begins in Year 2.		identify and represent part-whole relationships of halves, quarters and eighths in measurement contexts* 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*	represent unit fractions and their multiples in different ways	recognise equivalent fractions and make connections between fraction and decimal notations* count and represent fractions on a number line*	order and represent, add and subtract fractions with the same or related denominators* represent common percentages and connect them to their fraction and decimal equivalents* use their proficiency with multiplication facts and efficient calculation strategies to multiply large numbers by one- and two-digit numbers and divide by single-digit numbers* use mathematical modelling to solve financial and other practical problems, formulating and solving problems, choosing arithmetic operations and interpreting results in terms of the situation*	order common fractions, giving reasons, and add and subtract fractions with related denominators* solve problems involving finding a fraction, decimal or percentage of a quantity and use estimation to find approximate solutions to problems involving rational numbers and percentages* use mathematical modelling to solve financial and other practical problems involving percentages and rational numbers, formulating and solving the problem, and justifying choices*	use all 4 operations in calculations involving positive fractions and decimals, choosing efficient calculation strategies* choose between equivalent representations of rational numbers and percentages to assist in calculations* use mathematical modelling to solve practical problems involving rational numbers, percentages and ratios, in financial and other applied contexts, justifying choices of representation*	solve problems involving the 4 operations with integers and positive rational numbers* use mathematical modelling to solve practical problems involving ratios, percentages and rates in measurement and financial contexts* use appropriate metric units when solving measurement problems involving the perimeter and area of composite shapes, and volume of right prisms* use formulas to solve problems involving the area and circumference of circles*	recognise and use rational and irrational numbers to solve problems*	This aspect of the achievement standard concludes in Year 9.

		Prep Students:	Year 1 Students:	Year 2 Students:	Year 3 Students:	Year 4 Students:	Year 5 Students:	Year 6 Students:	Year 7 Students:	Year 8 Students:	Year 9 Students:	Year 10 Students:
Proportional thinking		This aspect of the achievement standard begins in Year 5.					represent common percentages and connect them to their fraction and decimal equivalents*	assign probabilities using common fractions, decimal and percentages* solve problems involving finding a fraction, decimal or percentage of a quantity and use estimation to find approximate solutions to problems involving rational numbers and percentages*	use all 4 operations in calculations involving positive fractions and decimals, choosing efficient calculation strategies* choose between equivalent representations of rational numbers and percentages to assist in calculations* use mathematical modelling to solve practical problems involving rational numbers, percentages and ratios, in financial and other applied contexts, justifying choices of representation*	use mathematical modelling to solve practical problems involving ratios, percentages and rates in measurement and financial contexts* use Pythagoras' theorem to solve measurement problems involving unknown lengths of right-angle triangles* identify conditions for congruency and similarity in shapes and create and test algorithms designed to test for congruency and similarity*	use mathematical modelling to solve practical problems involving direct proportion, ratio and scale, evaluating the model and communicating their methods and findings* apply Pythagoras' theorem and use trigonometric ratios to solve problems involving right-angled triangles* solve problems involving ratio, similarity and scale in two-dimensional situations* apply the enlargement transformation to images of shapes and objects, and interpret results* determine percentage errors in measurements*	use mathematical modelling to solve practical problems involving proportion and scaling, evaluating and modifying models, and reporting assumptions, methods and findings
Number patterns and algebraic thinking		copy and continue repeating patterns represent practical situations that involve quantifying, equal sharing, adding to and taking away from collections to at least 10*	use numbers, symbols and objects to create skip counting and repeating patterns, identifying the repeating unit*	describe and continue patterns that increase and decrease additively by a constant amount and identify missing elements in the pattern*	partition, rearrange and regroup two- and three-digit numbers in different ways to assist in calculations* create algorithms to investigate numbers and explore simple patterns* find unknown values in number sentences involving addition and subtraction* make estimates and determine the reasonableness of financial and other calculations* 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* 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*	find unknown values in numerical equations involving addition and subtraction* follow and create algorithms that generate sets of numbers and identify emerging patterns*	find unknown values in numerical equations involving multiplication and division* create and use algorithms to identify and explain patterns in the factors and multiples of numbers*	identify and explain rules used to create growing patterns find unknown values in numerical equations involving combinations of arithmetic operations* create and use algorithms to generate sets of numbers, using a rule	use algebraic expressions to represent situations, describe the relationships between variables from authentic data and substitute values into formulas to determine unknown values* solve linear equations with natural number solutions create tables of values related to algebraic expressions and formulas, and describe the effect of variation use formulas for the areas of triangles and parallelograms and the volumes of rectangular and triangular prisms to solve problems*	apply algebraic properties to rearrange, expand and factorise linear expressions graph linear relations and solve linear equations with rational solutions and one-variable inequalities, graphically and algebraically use mathematical modelling to solve problems using linear relations, interpreting and reviewing the model in context make and test conjectures involving linear relations using digital tools	use mathematical modelling to solve problems involving change in financial and other applied contexts, choosing to use linear and quadratic functions* expand binomial products, and factorise monic quadratic expressions graph quadratic functions and solve monic quadratic equations with integer roots algebraically describe the effects of variation of parameters on functions and relations, using digital tools, and make connections between their graphical and algebraic representations find the distance between 2 points on the Cartesian plane, and the gradient and midpoint of a line segment	use mathematical modelling to solve problems involving growth and decay in financial and other applied situations, applying linear, quadratic and exponential functions as appropriate, and solve related equations, numerically and graphically* make and test conjectures involving functions and relations using digital tools solve problems involving simultaneous linear equations and linear inequalities in 2 variables graphically and justify solutions

		Prep Students:	Year 1 Students:	Year 2 Students:	Year 3 Students:	Year 4 Students:	Year 5 Students:	Year 6 Students:	Year 7 Students:	Year 8 Students:	Year 9 Students:	Year 10 Students:
Measurement and geometry	**Understanding money**	No related achievement standard aspect for Prep.	solve problems involving addition and subtraction of numbers to 20 and use mathematical modelling to solve practical problems involving addition, subtraction, equal sharing and grouping, using calculation strategies*	use mathematical modelling to solve practical additive and multiplicative problems, including money transactions, representing the situation and choosing calculation strategies*	partition, rearrange and regroup two- and three-digit numbers in different ways to assist in calculations* represent money values in different ways make estimates and determine the reasonableness of financial and other calculations* 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*	use mathematical modelling to solve financial and other practical problems, formulating the problem using number sentences, solving the problem choosing efficient strategies and interpreting results in terms of the situation* use their proficiency with addition and multiplication facts to add and subtract, multiply and divide numbers efficiently*	check the reasonableness of their calculations using estimation use mathematical modelling to solve financial and other practical problems, formulating and solving problems, choosing arithmetic operations and interpreting results in terms of the situation*	solve problems involving finding a fraction, decimal or percentage of a quantity and use estimation to find approximate solutions to problems involving rational numbers and percentages* use mathematical modelling to solve financial and other practical problems involving percentages and rational numbers, formulating and solving the problem, and justifying choices*	use mathematical modelling to solve practical problems involving rational numbers, percentages and ratios, in financial and other applied contexts, justifying choices of representation*	use mathematical modelling to solve practical problems involving ratios, percentages and rates in measurement and financial contexts*	use mathematical modelling to solve problems involving change in financial and other applied contexts, choosing to use linear and quadratic functions*	use mathematical modelling to solve problems involving growth and decay in financial and other applied situations, applying linear, quadratic and exponential functions as appropriate, and solve related equations, numerically and graphically*
	Understanding units of measurement	identify the attributes of mass, capacity, length and duration, and use direct comparison strategies to compare objects and events	compare and order objects and events based on the attributes of length, mass, capacity and duration, communicating reasoning* measure the length of shapes and objects using uniform informal units*	identify and represent part-whole relationships of halves, quarters and eighths in measurement contexts* use uniform informal units to measure and compare shapes and objects	use familiar metric units when estimating, comparing and measuring the attributes of objects and events* identify angles as measures of turn and compare them to right angles* 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* make estimates and determine the reasonableness of financial and other calculations*	use scaled instruments and appropriate units to measure length, mass, capacity and temperature measure and approximate perimeters and areas	choose and use appropriate metric units to measure the attributes of length, mass and capacity, and to solve problems involving perimeter and area estimate, construct and measure angles in degrees	use all 4 operations with decimals and connect decimal representations of measurements to the metric system* convert between common units of length, mass and capacity use the formula for the area of a rectangle and angle properties to solve problems*	use mathematical modelling to solve practical problems involving rational numbers, percentages and ratios, in financial and other applied contexts, justifying choices of representation* use formulas for the areas of triangles and parallelograms and the volumes of rectangular and triangular prisms to solve problems* describe the relationships between the radius, diameter and circumference of a circle	recognise irrational numbers and terminating or recurring decimals* use appropriate metric units when solving measurement problems involving the perimeter and area of composite shapes, and volume of right prisms* use Pythagoras' theorem to solve measurement problems involving unknown lengths of right-angle triangles* use formulas to solve problems involving the area and circumference of circles*	apply formulas to solve problems involving the surface area and volume of right prisms and cylinders determine percentage errors in measurements* solve problems involving ratio, similarity and scale in two-dimensional situations* apply Pythagoras' theorem and use trigonometric ratios to solve problems involving right-angled triangles* use mathematical modelling to solve practical problems involving direct proportion, ratio and scale, evaluating the model and communicating their methods and findings*	recognise the effect of approximations of real numbers in repeated calculations* identify the impact of measurement errors on the accuracy of results* apply Pythagoras' theorem and trigonometry to solve practical problems involving right-angled triangles*
	Understanding geometric properties	name, create and sort familiar shapes and give their reasoning	make, compare and classify shapes and objects using obvious features	compare and classify shapes, describing features using formal spatial terms	make, compare and classify objects using key features identify angles as measures of turn and compare them to right angles*	represent and approximate shapes and objects in the environment identify line and rotational symmetry in plane shapes and create symmetrical patterns compare angles relative to a right angle using angle names	connect objects to their two-dimensional nets perform and describe the results of transformations and identify any symmetries	identify the parallel cross-section for right prisms create tessellating patterns using combinations of transformations use the formula for the area of a rectangle and angle properties to solve problems*	apply knowledge of angle relationships and the sum of angles in a triangle to solve problems, giving reasons use formulas for the areas of triangles and parallelograms and the volumes of rectangular and triangular prisms to solve problems* classify polygons according to their features and create an algorithm designed to sort and classify shapes use coordinates to describe transformations of points in the plane*	use Pythagoras' theorem to solve measurement problems involving unknown lengths of right-angle triangles* identify conditions for congruency and similarity in shapes and create and test algorithms designed to test for congruency and similarity apply the properties of quadrilaterals to solve problems	solve problems involving ratio, similarity and scale in two-dimensional situations* design, use and test algorithms based on geometric constructions or theorems apply Pythagoras' theorem and use trigonometric ratios to solve problems involving right-angled triangles* apply the enlargement transformation to images of shapes and objects, and interpret results* use mathematical modelling to solve practical problems involving direct proportion, ratio and scale, evaluating the model and communicating their methods and findings*	recognise the effect of approximations of real numbers in repeated calculations* solve measurement problems involving surface area and volume of composite objects apply Pythagoras' theorem and trigonometry to solve practical problems involving right-angled triangles* use deductive reasoning, theorems and algorithms to solve spatial problems interpret networks used to represent practical situations and describe connectedness

		Prep Students:	Year 1 Students:	Year 2 Students:	Year 3 Students:	Year 4 Students:	Year 5 Students:	Year 6 Students:	Year 7 Students:	Year 8 Students:	Year 9 Students:	Year 10 Students:
Statistics and probability	**Positioning and locating**	describe the position and the location of themselves and objects in relation to other objects and people within a familiar space	give and follow directions to move people and objects within a space	locate and identify positions of features in two-dimensional representations and move position by following directions and pathways	interpret and create two-dimensional representations of familiar environments	create and interpret grid references	use grid coordinates to locate and move positions	locate an ordered pair in any one of the 4 quadrants on the Cartesian plane* use integers to represent points on a number line and in the Cartesian plane* use coordinates to describe transformations of points in the plane*	represent objects two-dimensionally in different ways, describing the usefulness of these representations	use 3 dimensions to locate and describe position	This aspect of the achievement standard concludes in Year 8.	
	Measuring time	sequence and connect familiar events to the time of day	compare and order objects and events based on the attributes of length, mass, capacity and duration, communicating reasoning*	identify and represent part-whole relationships of halves, quarters and eighths in measurement contexts* 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*	estimate and compare measures of duration using formal units of time	convert between units of time when solving problems involving duration	convert between 12- and 24-hour time interpret and compare data represented in line graphs*	interpret and use timetables	use algebraic expressions to represent situations, describe the relationships between variables from authentic data and substitute values into formulas to determine unknown values*	solve problems of duration involving 12- and 24-hour cycles across multiple time zones	express small and large numbers in scientific notation*	This aspect of the achievement standard concludes in Year 9.
	Understanding chance	This aspect of the achievement standard begins in Year 3.			conduct repeated chance experiments and discuss variation in results use practical activities, observation or experiment to identify and describe outcomes and the likelihood of everyday events explaining reasoning	conduct repeated chance experiments and describe the variation in results order events or the outcomes of chance experiments in terms of likelihood and identify whether events are independent or dependent	conduct repeated chance experiments, list the possible outcomes, estimate likelihoods and make comparisons between those with and without equally likely outcomes*	conduct simulations using digital tools, to generate and record the outcomes from many trials of a chance experiment compare observed frequencies to the expected frequencies of the outcomes of chance experiments assign probabilities using common fractions, decimal and percentages*	conduct repeated single-step chance experiments and run simulations using digital tools, giving reasons for differences between predicted and observed results list sample spaces for single step experiments, assign probabilities to outcomes and predict relative frequencies for related events	conduct experiments and simulations using digital tools to determine related probabilities of compound events represent the possible combinations of 2 events with tables and diagrams, and determine related probabilities to solve practical problems	design and conduct experiments or simulations for combined events using digital tools assign probabilities to the outcomes of compound events determine sets of outcomes for compound events and represent these in various ways	design and conduct simulations involving conditional probability, using digital tools apply conditional probability to solve problems involving compound events
	Interpreting and representing data	collect, sort and compare data in response to questions in familiar contexts*	collect and record categorical data, create one-to-one displays, and compare and discuss the data using frequencies*	use a range of methods to collect, record, represent and interpret categorical data in response to questions	conduct guided statistical investigations involving categorical and discrete numerical data, and interpret their results in terms of the context record, represent and compare data they have collected	use surveys and digital tools to generate categorical or discrete numerical data in statistical investigations and communicate their findings in context create many-to-one data displays, assess the suitability of displays for representing data and discuss the shape of distributions and variation in data	plan and conduct statistical investigations that collect nominal and ordinal categorical and discrete numerical data using digital tools identify the mode and interpret the shape of distributions of data in context interpret and compare data represented in line graphs*	compare distributions of discrete and continuous numerical and ordinal categorical data sets as part of their statistical investigations, using digital tools critique arguments presented in the media based on statistics	use algebraic expressions to represent situations, describe the relationships between variables from authentic data and substitute values into formulas to determine unknown values* plan and conduct statistical investigations involving discrete and continuous numerical data, using appropriate displays. interpret data in terms of the shape of distribution and summary statistics, identifying possible outliers decide which measure of central tendency is most suitable and explain their reasoning	conduct statistical investigations and explain the implications of obtaining data through sampling analyse and describe the distribution of data compare the variation in distributions of random samples of the same and different size from a given population with respect to shape, measures of central tendency and range	compare and analyse the distributions of multiple numerical data sets, choose representations, describe features of these data sets using summary statistics and the shape of distributions, and consider the effect of outliers explain how sampling techniques and representation can be used to support or question conclusions or to promote a point of view	plan and conduct statistical investigations involving bivariate data represent the distribution of data involving 2 variables, using tables and scatter plots, and comment on possible association analyse inferences and conclusions in the media, noting potential sources of bias compare the distribution of continuous numerical data using various displays, and discuss distributions in terms of centre, spread, shape and outliers

Additional resources

The following resources are also available:

- Prep–Year 6 Mathematics: Sequence of achievement standards
- Years 7–10 Mathematics: Sequence of achievement standards
- Prep–Year 10 Mathematics: Sequence of achievement standard aspects and related content descriptions
- Prep–Year 6 English: Sequence of achievement standards
- Years 7–10 English: Sequence of achievement standards
- Prep–Year 10 English: Sequence of achievement standard aspects
- Prep–Year 10 English: Sequence of achievement standard aspects and related content descriptions
- Prep–Year 10 Advice: Planning for teaching, learning and assessment.

More information

If you would like more information, please visit the QCAA website www.qcaa.qld.edu.au or email the K–10 Curriculum and Assessment branch at australiancurriculum@qcaa.qld.edu.au.