Year 6 Mathematics

Australian Curriculum Version 9.0: Achievement standard aligned to content descriptions

This resource shows alignment between aspects of the achievement standard and relevant content descriptions for Year 6. A similar resource is available for other year levels.

The Australian Curriculum (AC) v9.0 code for each content description includes an element indicating the strand it is organised by, e.g. AC9M6N01 indicates Number strand.

Key to content description codes: Mathematics	
e.g. AC9M6N01 Australian Curriculum (**AC**) Version 9 (**9**) Mathematics (**M**) Year (**6**) Strand (**N**, **A**, **M**, **SP**, **ST**, **P**) Content description number (**##**)	Strands: • N — Number • A — Algebra • M — Measurement • SP — Space • ST — Statistics • P — Probability

Year 6 Australian Curriculum: Mathematics achievement standard

By the end of Year 6, students use integers to represent points on a number line and in the Cartesian plane. They solve problems using the properties of prime, composite and square numbers. Students order common fractions, giving reasons, and add and subtract fractions with related denominators. They use all 4 operations with decimals and connect decimal representations of measurements to the metric system. Students 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. They use mathematical modelling to solve financial and other practical problems involving percentages and rational numbers, formulating and solving the problem, and justifying choices. Students find unknown values in numerical equations involving combinations of arithmetic operations. They identify and explain rules used to create growing patterns. Students create and use algorithms to generate sets of numbers, using a rule.

They interpret and use timetables. Students convert between common units of length, mass and capacity. They use the formula for the area of a rectangle and angle properties to solve problems. Students identify the parallel cross-section for right prisms. They create tessellating patterns using combinations of transformations. Students locate an ordered pair in any one of the 4 quadrants on the Cartesian plane.

They compare distributions of discrete and continuous numerical and ordinal categorical data sets as part of their statistical investigations, using digital tools. Students critique arguments presented in the media based on statistics. They assign probabilities using common fractions, decimal and percentages. Students conduct simulations using digital tools, to generate and record the outcomes from many trials of a chance experiment. They compare observed frequencies to the expected frequencies of the outcomes of chance experiments.

Achievement standard aspect	Relevant content description/s	AC v9.0 code
By the end of Year 6	**Students learn to:**	
Students use integers to represent points on a number line and in the Cartesian plane.	• recognise situations, including financial contexts, that use integers; locate and represent integers on a number line and as coordinates on the Cartesian plane	AC9M6N01
	• locate points in the 4 quadrants of a Cartesian plane; describe changes to the coordinates when a point is moved to a different position in the plane	AC9M6SP02
They solve problems using the properties of prime, composite and square numbers.	• identify and describe the properties of prime, composite and square numbers and use these properties to solve problems and simplify calculations	AC9M6N02
They order common fractions, giving reasons, and add and subtract fractions with related denominators.	• apply knowledge of equivalence to compare, order and represent common fractions including halves, thirds and quarters on the same number line and justify their order	AC9M6N03
	• solve problems involving addition and subtraction of fractions using knowledge of equivalent fractions	AC9M6N05
They use all 4 operations with decimals and connect decimal representations of measurements to the metric system.	• apply knowledge of place value to add and subtract decimals, using digital tools where appropriate; use estimation and rounding to check the reasonableness of answers	AC9M6N04
	• multiply and divide decimals by multiples of powers of 10 without a calculator, applying knowledge of place value and proficiency with multiplication facts; using estimation and rounding to check the reasonableness of answers	AC9M6N06
	• convert between common metric units of length, mass and capacity; choose and use decimal representations of metric measurements relevant to the context of a problem	AC9M6M01
They 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.	• apply knowledge of place value to add and subtract decimals, using digital tools where appropriate; use estimation and rounding to check the reasonableness of answers	AC9M6N04
	• multiply and divide decimals by multiples of powers of 10 without a calculator, applying knowledge of place value and proficiency with multiplication facts; using estimation and rounding to check the reasonableness of answers	AC9M6N06
	• solve problems that require finding a familiar fraction, decimal or percentage of a quantity, including percentage discounts, choosing efficient calculation strategies and using digital tools where appropriate	AC9M6N07
	• approximate numerical solutions to problems involving rational numbers and percentages, including financial contexts, using appropriate estimation strategies	AC9M6N08
They 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 natural and rational numbers and percentages, including in financial contexts; formulate the problems, choosing operations and efficient calculation strategies, and using digital tools where appropriate; interpret and communicate solutions in terms of the situation, justifying the choices made	AC9M6N09

Achievement standard aspect	Relevant content description/s	AC v9.0 code
They find unknown values in numerical equations involving combinations of arithmetic operations.	• find unknown values in numerical equations involving brackets and combinations of arithmetic operations, using the properties of numbers and operations	AC9M6A02
They identify and explain rules used to create growing patterns.	• recognise and use rules that generate visually growing patterns and number patterns involving rational numbers	AC9M6A01
They create and use algorithms to generate sets of numbers, using a rule.	• create and use algorithms involving a sequence of steps and decisions that use rules to generate sets of numbers; identify, interpret and explain emerging patterns	AC9M6A03
They interpret and use timetables.	• interpret and use timetables and itineraries to plan activities and determine the duration of events and journeys	AC9M6M03
They convert between common units of length, mass and capacity.	• convert between common metric units of length, mass and capacity; choose and use decimal representations of metric measurements relevant to the context of a problem	AC9M6M01
They use the formula for the area of a rectangle and angle properties to solve problems.	• establish the formula for the area of a rectangle and use it to solve practical problems	AC9M6M02
	• identify the relationships between angles on a straight line, angles at a point and vertically opposite angles; use these to determine unknown angles, communicating reasoning	AC9M6M04
They identify the parallel cross-section for right prisms.	• compare the parallel cross-sections of objects and recognise their relationships to right prisms	AC9M6SP01
They create tessellating patterns using combinations of transformations.	• recognise and use combinations of transformations to create tessellations and other geometric patterns, using dynamic geometric software where appropriate	AC9M6SP03
They locate an ordered pair in any one of the 4 quadrants on the Cartesian plane.	• recognise situations, including financial contexts, that use integers; locate and represent integers on a number line and as coordinates on the Cartesian plane	AC9M6N01
	• locate points in the 4 quadrants of a Cartesian plane; describe changes to the coordinates when a point is moved to a different position in the plane	AC9M6SP02
They compare distributions of discrete and continuous numerical and ordinal categorical data sets as part of their statistical investigations, using digital tools.	• interpret and compare data sets for ordinal and nominal categorical, discrete and continuous numerical variables using comparative displays or visualisations and digital tools; compare distributions in terms of mode, range and shape	AC9M6ST01
	• plan and conduct statistical investigations by posing and refining questions or identifying a problem and collecting relevant data; analyse and interpret the data and communicate findings within the context of the investigation	AC9M6ST03
They critique arguments presented in the media based on statistics.	• identify statistically informed arguments presented in traditional and digital media; discuss and critique methods, data representations and conclusions	AC9M6ST02
They assign probabilities using common fractions, decimal and percentages.	• recognise that probabilities lie on numerical scales of 0–1 or 0%–100% and use estimation to assign probabilities that events occur in a given context, using common fractions, percentages and decimals	AC9M6P01
They conduct simulations using digital tools, to generate and record the outcomes from many trials of a chance experiment.	• conduct repeated chance experiments and run simulations with an increasing number of trials using digital tools; compare observations with expected results and discuss the effect on variation of increasing the number of trials	AC9M6P02
They compare observed frequencies to the expected frequencies of the outcomes of chance experiments.	• conduct repeated chance experiments and run simulations with an increasing number of trials using digital tools; compare observations with expected results and discuss the effect on variation of increasing the number of trials.	AC9M6P02

More information

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