

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 7. 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. AC9M7N01 indicates Number strand.

Key to content description codes: Mathematics	
e.g. AC9M7N01 Australian Curriculum (AC) Version 9 (9) Mathematics (M) Year (7) Strand (N, A, M, SP, ST, P) Content description number (##)	Strands: <ul style="list-style-type: none"> N — Number A — Algebra M — Measurement SP — Space ST — Statistics P — Probability

Year 7 Australian Curriculum: Mathematics achievement standard

By the end of Year 7, students represent natural numbers in expanded form and as products of prime factors, using exponent notation. They solve problems involving squares of numbers and square roots of perfect square numbers. Students solve problems involving addition and subtraction of integers. They use all 4 operations in calculations involving positive fractions and decimals, choosing efficient calculation strategies. Students choose between equivalent representations of rational numbers and percentages to assist in calculations. They use mathematical modelling to solve practical problems involving rational numbers, percentages and ratios, in financial and other applied contexts, justifying choices of representation. Students use algebraic expressions to represent situations, describe the relationships between variables from authentic data and substitute values into formulas to determine unknown values. They solve linear equations with natural number solutions. Students create tables of values related to algebraic expressions and formulas, and describe the effect of variation.

They apply knowledge of angle relationships and the sum of angles in a triangle to solve problems, giving reasons. Students use formulas for the areas of triangles and parallelograms and the volumes of rectangular and triangular prisms to solve problems. They describe the relationships between the radius, diameter and circumference of a circle. Students classify polygons according to their features and create an algorithm designed to sort and classify shapes. They represent objects two-dimensionally in different ways, describing the usefulness of these representations. Students use coordinates to describe transformations of points in the plane

They plan and conduct statistical investigations involving discrete and continuous numerical data, using appropriate displays. Students interpret data in terms of the shape of distribution and summary statistics, identifying possible outliers. They decide which measure of central tendency is most suitable and explain their reasoning. Students list sample spaces for single step experiments, assign probabilities to outcomes and predict relative frequencies for related events. They conduct repeated single-step chance experiments and run simulations using digital tools, giving reasons for differences between predicted and observed results.

Achievement standard aspect	Relevant content description/s	AC v9.0 code
By the end of Year 7	Students learn to:	
Students represent natural numbers in expanded form and as products of prime factors, using exponent notation.	• represent natural numbers as products of powers of prime numbers using exponent notation	AC9M7N02
	• represent natural numbers in expanded notation using place value and powers of 10	AC9M7N03
They solve problems involving squares of numbers and square roots of perfect square numbers.	• describe the relationship between perfect square numbers and square roots, and use squares of numbers and square roots of perfect square numbers to solve problems	AC9M7N01
They solve problems involving addition and subtraction of integers.	• compare, order and solve problems involving addition and subtraction of integers	AC9M7N07
They use all 4 operations in calculations involving positive fractions and decimals, choosing efficient calculation strategies.	• round decimals to a given accuracy appropriate to the context and use appropriate rounding and estimation to check the reasonableness of solutions	AC9M7N05
	• use the 4 operations with positive rational numbers including fractions, decimals and percentages to solve problems using efficient calculation strategies	AC9M7N06
They choose between equivalent representations of rational numbers and percentages to assist in calculations.	• find equivalent representations of rational numbers and represent rational numbers on a number line	AC9M7N04
	• use the 4 operations with positive rational numbers including fractions, decimals and percentages to solve problems using efficient calculation strategies	AC9M7N06
They use mathematical modelling to solve practical problems involving rational numbers, percentages and ratios, in financial and other applied contexts, justifying choices of representation.	• find equivalent representations of rational numbers and represent rational numbers on a number line	AC9M7N04
	• use the 4 operations with positive rational numbers including fractions, decimals and percentages to solve problems using efficient calculation strategies	AC9M7N06
	• recognise, represent and solve problems involving ratios	AC9M7N08
	• use mathematical modelling to solve practical problems, involving rational numbers and percentages, including financial contexts; formulate problems, choosing representations and efficient calculation strategies, using digital tools as appropriate; interpret and communicate solutions in terms of the situation, justifying choices made about the representation	AC9M7N09
	• use mathematical modelling to solve practical problems involving ratios; formulate problems, interpret and communicate solutions in terms of the situation, justifying choices made about the representation	AC9M7M06
They use algebraic expressions to represent situations, describe the relationships between variables from authentic data and substitute values into formulas to determine unknown values.	• recognise and use variables to represent everyday formulas algebraically and substitute values into formulas to determine an unknown	AC9M7A01
	• formulate algebraic expressions using constants, variables, operations and brackets	AC9M7A02
	• describe relationships between variables represented in graphs of functions from authentic data	AC9M7A04
	• manipulate formulas involving several variables using digital tools, and describe the effect of systematic variation in the values of the variables	AC9M7A06

Achievement standard aspect	Relevant content description/s	AC v9.0 code
They solve linear equations with natural number solutions.	<ul style="list-style-type: none"> solve one-variable linear equations with natural number solutions; verify the solution by substitution 	AC9M7A03
They create tables of values related to algebraic expressions and formulas, and describe the effect of variation.	<ul style="list-style-type: none"> generate tables of values from visually growing patterns or the rule of a function; describe and plot these relationships on the Cartesian plane 	AC9M7A05
	<ul style="list-style-type: none"> manipulate formulas involving several variables using digital tools, and describe the effect of systematic variation in the values of the variables 	AC9M7A06
They apply knowledge of angle relationships and the sum of angles in a triangle to solve problems, giving reasons.	<ul style="list-style-type: none"> identify corresponding, alternate and co-interior relationships between angles formed when parallel lines are crossed by a transversal; use them to solve problems and explain reasons 	AC9M7M04
	<ul style="list-style-type: none"> demonstrate that the interior angle sum of a triangle in the plane is 180° and apply this to determine the interior angle sum of other shapes and the size of unknown angles 	AC9M7M05
They use formulas for the areas of triangles and parallelograms and the volumes of rectangular and triangular prisms to solve problems.	<ul style="list-style-type: none"> recognise and use variables to represent everyday formulas algebraically and substitute values into formulas to determine an unknown 	AC9M7A01
	<ul style="list-style-type: none"> solve problems involving the area of triangles and parallelograms using established formulas and appropriate units 	AC9M7M01
	<ul style="list-style-type: none"> solve problems involving the volume of right prisms including rectangular and triangular prisms, using established formulas and appropriate units 	AC9M7M02
They describe the relationships between the radius, diameter and circumference of a circle.	<ul style="list-style-type: none"> describe the relationship between π and the features of circles including the circumference, radius and diameter 	AC9M7M03
They classify polygons according to their features and create an algorithm designed to sort and classify shapes.	<ul style="list-style-type: none"> classify triangles, quadrilaterals and other polygons according to their side and angle properties; identify and reason about relationships 	AC9M7SP02
	<ul style="list-style-type: none"> design and create algorithms involving a sequence of steps and decisions that will sort and classify sets of shapes according to their attributes, and describe how the algorithms work 	AC9M7SP04
They represent objects two-dimensionally in different ways, describing the usefulness of these representations.	<ul style="list-style-type: none"> represent objects in 2 dimensions; discuss and reason about the advantages and disadvantages of different representations 	AC9M7SP01
They use coordinates to describe transformations of points in the plane.	<ul style="list-style-type: none"> describe transformations of a set of points using coordinates in the Cartesian plane, translations and reflections on an axis, and rotations about a given point 	AC9M7SP03
They plan and conduct statistical investigations involving discrete and continuous numerical data, using appropriate displays.	<ul style="list-style-type: none"> acquire data sets for discrete and continuous numerical variables and calculate the range, median, mean and mode; make and justify decisions about which measures of central tendency provide useful insights into the nature of the distribution of data 	AC9M7ST01
	<ul style="list-style-type: none"> create different types of numerical data displays including stem-and-leaf plots using software where appropriate; describe and compare the distribution of data, commenting on the shape, centre and spread including outliers and determining the range, median, mean and mode 	AC9M7ST02
	<ul style="list-style-type: none"> plan and conduct statistical investigations involving data for discrete and continuous numerical variables; analyse and interpret distributions of data and report findings in terms of shape and summary statistics 	AC9M7ST03
They interpret data in terms of the shape of distribution and summary statistics, identifying possible outliers.	<ul style="list-style-type: none"> acquire data sets for discrete and continuous numerical variables and calculate the range, median, mean and mode; make and justify decisions about which measures of central tendency provide useful insights into the nature of the distribution of data 	AC9M7ST01
	<ul style="list-style-type: none"> create different types of numerical data displays including stem-and-leaf plots using software where appropriate; describe and compare the distribution of data, commenting on the shape, centre and spread including outliers and determining the range, median, mean and mode 	AC9M7ST02
They decide which measure of central tendency is most suitable and explain their reasoning.	<ul style="list-style-type: none"> acquire data sets for discrete and continuous numerical variables and calculate the range, median, mean and mode; make and justify decisions about which measures of central tendency provide useful insights into the nature of the distribution of data 	AC9M7ST01
	<ul style="list-style-type: none"> create different types of numerical data displays including stem-and-leaf plots using software where appropriate; describe and compare the distribution of data, commenting on the shape, centre and spread including outliers and determining the range, median, mean and mode 	AC9M7ST02
They list sample spaces for single step experiments, assign probabilities to outcomes and predict relative frequencies for related events.	<ul style="list-style-type: none"> identify the sample space for single-stage events; assign probabilities to the outcomes of these events and predict relative frequencies for related events 	AC9M7P01
They conduct repeated single-step chance experiments and run simulations using digital tools, giving reasons for differences between predicted and observed results.	<ul style="list-style-type: none"> identify the sample space for single-stage events; assign probabilities to the outcomes of these events and predict relative frequencies for related events 	AC9M7P01
	<ul style="list-style-type: none"> conduct repeated chance experiments and run simulations with a large number of trials using digital tools; compare predictions about outcomes with observed results, explaining the difference. 	AC9M7P02

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.

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