

This resource shows alignment between aspects of the achievement standard and relevant content descriptions for Year 8. 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. AC9M8N01 indicates Number strand.

Key to content description codes: Mathematics	
e.g. AC9M7N01 Australian Curriculum (AC) Version 9 (9) Mathematics (M) Year (8) Strand (N, A, M, SP, ST, P) Content description number (##)	Strands: <ul style="list-style-type: none"> <li>N — Number</li> <li>A — Algebra</li> <li>M — Measurement</li> <li>SP — Space</li> <li>ST — Statistics</li> <li>P — Probability</li> </ul>

## Year 8 Australian Curriculum: Mathematics achievement standard

By the end of Year 8, students recognise irrational numbers and terminating or recurring decimals. They apply the exponent laws to calculations with numbers involving positive integer exponents. Students solve problems involving the 4 operations with integers and positive rational numbers. They use mathematical modelling to solve practical problems involving ratios, percentages and rates in measurement and financial contexts. Students apply algebraic properties to rearrange, expand and factorise linear expressions. They graph linear relations and solve linear equations with rational solutions and one-variable inequalities, graphically and algebraically. Students use mathematical modelling to solve problems using linear relations, interpreting and reviewing the model in context. They make and test conjectures involving linear relations using digital tools.

Students use appropriate metric units when solving measurement problems involving the perimeter and area of composite shapes, and volume of right prisms. They use Pythagoras' theorem to solve measurement problems involving unknown lengths of right-angle triangles. Students use formulas to solve problems involving the area and circumference of circles. They solve problems of duration involving 12- and 24-hour cycles across multiple time zones. Students use 3 dimensions to locate and describe position. They identify conditions for congruency and similarity in shapes and create and test algorithms designed to test for congruency and similarity. Students apply the properties of quadrilaterals to solve problems.

They conduct statistical investigations and explain the implications of obtaining data through sampling. Students analyse and describe the distribution of data. They 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. Students represent the possible combinations of 2 events with tables and diagrams, and determine related probabilities to solve practical problems. They conduct experiments and simulations using digital tools to determine related probabilities of compound events.

Achievement standard aspect	Relevant content description/s	AC v9.0 code
<b>By the end of Year 8</b>	<b>Students learn to:</b>	
Students recognise irrational numbers and terminating or recurring decimals.	• recognise irrational numbers in applied contexts, including square roots and $\pi$	AC9M8N01
	• recognise terminating and recurring decimals, using digital tools as appropriate	AC9M8N03
	• solve problems involving the circumference and area of a circle using formulas and appropriate units	AC9M8M03
They apply the exponent laws to calculations with numbers involving positive integer exponents.	• establish and apply the exponent laws with positive integer exponents and the zero-exponent, using exponent notation with numbers	AC9M8N02
They solve problems involving the 4 operations with integers and positive rational numbers.	• use the 4 operations with integers and with rational numbers, choosing and using efficient strategies and digital tools where appropriate	AC9M8N04
They use mathematical modelling to solve practical problems involving ratios, percentages and rates in measurement and financial contexts.	• use the 4 operations with integers and with rational numbers, choosing and using efficient strategies and digital tools where appropriate	AC9M8N04
	• use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts; formulate problems, choosing efficient calculation strategies and using digital tools where appropriate; interpret and communicate solutions in terms of the situation, reviewing the appropriateness of the model	AC9M8N05
	• recognise and use rates to solve problems involving the comparison of 2 related quantities of different units of measure	AC9M8M05
	• use mathematical modelling to solve practical problems involving ratios and rates, including financial contexts; formulate problems; interpret and communicate solutions in terms of the situation, reviewing the appropriateness of the model	AC9M8M07
They apply algebraic properties to rearrange, expand and factorise linear expressions.	• create, expand, factorise, rearrange and simplify linear expressions, applying the associative, commutative, identity, distributive and inverse properties	AC9M8A01
They graph linear relations and solve linear equations with rational solutions and one-variable inequalities, graphically and algebraically.	• graph linear relations on the Cartesian plane using digital tools where appropriate; solve linear equations and one-variable inequalities using graphical and algebraic techniques; verify solutions by substitution	AC9M8A02
They use mathematical modelling to solve problems using linear relations, interpreting and reviewing the model in context.	• create, expand, factorise, rearrange and simplify linear expressions, applying the associative, commutative, identity, distributive and inverse properties	AC9M8A01
	• graph linear relations on the Cartesian plane using digital tools where appropriate; solve linear equations and one-variable inequalities using graphical and algebraic techniques; verify solutions by substitution	AC9M8A02

Achievement standard aspect	Relevant content description/s	AC v9.0 code
	<ul style="list-style-type: none"> <li>use mathematical modelling to solve applied problems involving linear relations, including financial contexts; formulate problems with linear functions, choosing a representation; interpret and communicate solutions in terms of the situation, reviewing the appropriateness of the model</li> </ul>	<a href="#">AC9M8A03</a>
They make and test conjectures involving linear relations using digital tools.	<ul style="list-style-type: none"> <li>graph linear relations on the Cartesian plane using digital tools where appropriate; solve linear equations and one-variable inequalities using graphical and algebraic techniques; verify solutions by substitution</li> </ul>	<a href="#">AC9M8A02</a>
	<ul style="list-style-type: none"> <li>experiment with linear functions and relations using digital tools, making and testing conjectures and generalising emerging patterns</li> </ul>	<a href="#">AC9M8A04</a>
They use appropriate metric units when solving measurement problems involving the perimeter and area of composite shapes, and volume of right prisms.	<ul style="list-style-type: none"> <li>use the 4 operations with integers and with rational numbers, choosing and using efficient strategies and digital tools where appropriate</li> </ul>	<a href="#">AC9M8N04</a>
	<ul style="list-style-type: none"> <li>solve problems involving the area and perimeter of irregular and composite shapes using appropriate units</li> </ul>	<a href="#">AC9M8M01</a>
	<ul style="list-style-type: none"> <li>solve problems involving the volume and capacity of right prisms using appropriate units</li> </ul>	<a href="#">AC9M8M02</a>
They use Pythagoras' theorem to solve measurement problems involving unknown lengths of right-angle triangle.	<ul style="list-style-type: none"> <li>use Pythagoras' theorem to solve problems involving the side lengths of right-angled triangles</li> </ul>	<a href="#">AC9M8M06</a>
They use formulas to solve problems involving the area and circumference of circles.	<ul style="list-style-type: none"> <li>use the 4 operations with integers and with rational numbers, choosing and using efficient strategies and digital tools where appropriate</li> </ul>	<a href="#">AC9M8N04</a>
	<ul style="list-style-type: none"> <li>solve problems involving the circumference and area of a circle using formulas and appropriate units</li> </ul>	<a href="#">AC9M8M03</a>
They solve problems of duration involving 12- and 24-hour cycles across multiple time zones.	<ul style="list-style-type: none"> <li>solve problems involving duration, including using 12- and 24-hour time across multiple time zones</li> </ul>	<a href="#">AC9M8M04</a>
They use 3 dimensions to locate and describe position.	<ul style="list-style-type: none"> <li>describe the position and location of objects in 3 dimensions in different ways, including using a three-dimensional coordinate system with the use of dynamic geometric software and other digital tools</li> </ul>	<a href="#">AC9M8SP03</a>
They identify conditions for congruency and similarity in shapes and create and test algorithms designed to test for congruency and similarity.	<ul style="list-style-type: none"> <li>identify the conditions for congruence and similarity of triangles and explain the conditions for other sets of common shapes to be congruent or similar, including those formed by transformations</li> </ul>	<a href="#">AC9M8SP01</a>
	<ul style="list-style-type: none"> <li>design, create and test algorithms involving a sequence of steps and decisions that identify congruency or similarity of shapes, and describe how the algorithm works</li> </ul>	<a href="#">AC9M8SP04</a>
They apply the properties of quadrilaterals to solve problems.	<ul style="list-style-type: none"> <li>establish properties of quadrilaterals using congruent triangles and angle properties, and solve related problems explaining reasoning</li> </ul>	<a href="#">AC9M8SP02</a>
They conduct statistical investigations and explain the implications of obtaining data through sampling.	<ul style="list-style-type: none"> <li>investigate techniques for data collection including census, sampling, experiment and observation, and explain the practicalities and implications of obtaining data through these techniques</li> </ul>	<a href="#">AC9M8ST01</a>
	<ul style="list-style-type: none"> <li>analyse and report on the distribution of data from primary and secondary sources using random and non-random sampling techniques to select and study samples</li> </ul>	<a href="#">AC9M8ST02</a>
	<ul style="list-style-type: none"> <li>compare variations in distributions and proportions obtained from random samples of the same size drawn from a population and recognise the effect of sample size on this variation</li> </ul>	<a href="#">AC9M8ST03</a>
	<ul style="list-style-type: none"> <li>plan and conduct statistical investigations involving samples of a population; use ethical and fair methods to make inferences about the population and report findings, acknowledging uncertainty</li> </ul>	<a href="#">AC9M8ST04</a>
They analyse and describe the distribution of data.	<ul style="list-style-type: none"> <li>analyse and report on the distribution of data from primary and secondary sources using random and non-random sampling techniques to select and study samples</li> </ul>	<a href="#">AC9M8ST02</a>
They 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.	<ul style="list-style-type: none"> <li>compare variations in distributions and proportions obtained from random samples of the same size drawn from a population and recognise the effect of sample size on this variation</li> </ul>	<a href="#">AC9M8ST03</a>
They represent the possible combinations of 2 events with tables and diagrams, and determine related probabilities to solve practical problems.	<ul style="list-style-type: none"> <li>recognise that complementary events have a combined probability of one; use this relationship to calculate probabilities in applied contexts</li> </ul>	<a href="#">AC9M8P01</a>
	<ul style="list-style-type: none"> <li>determine all possible combinations for 2 events, using two-way tables, tree diagrams and Venn diagrams, and use these to determine probabilities of specific outcomes in practical situations</li> </ul>	<a href="#">AC9M8P02</a>
They conduct experiments and simulations using digital tools to determine related probabilities of compound events.	<ul style="list-style-type: none"> <li>recognise that complementary events have a combined probability of one; use this relationship to calculate probabilities in applied contexts</li> </ul>	<a href="#">AC9M8P01</a>
	<ul style="list-style-type: none"> <li>determine all possible combinations for 2 events, using two-way tables, tree diagrams and Venn diagrams, and use these to determine probabilities of specific outcomes in practical situations</li> </ul>	<a href="#">AC9M8P02</a>
	<ul style="list-style-type: none"> <li>conduct repeated chance experiments and simulations, using digital tools to determine probabilities for compound events, and describe results.</li> </ul>	<a href="#">AC9M8P03</a>

## More information

If you would like more information, please visit the QCAA website [www.qcaa.qld.edu.au](http://www.qcaa.qld.edu.au). Alternatively, email the K–10 Curriculum and Assessment branch at [australiancurriculum@qcaa.qld.edu.au](mailto:australiancurriculum@qcaa.qld.edu.au).



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