

Comparison of AC v8.4 to v9.0

Year 6: Mathematics

Key	same/refined	removed	new	moved
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Note:

- the key applies to the content descriptions only
- v8.4 content descriptions may have been reordered to align with v9.0 content descriptions.

Version 8.4		Version 9.0	
Achievement standard		Achievement standard	
<p>By the end of Year 6, students recognise the properties of prime, composite, square and triangular numbers. They describe the use of integers in everyday contexts. They solve problems involving all four operations with whole numbers. Students connect fractions, decimals and percentages as different representations of the same number. They solve problems involving the addition and subtraction of related fractions. Students make connections between the powers of 10 and the multiplication and division of decimals. They describe rules used in sequences involving whole numbers, fractions and decimals. Students connect decimal representations to the metric system and choose appropriate units of measurement to perform a calculation. They make connections between capacity and volume. They solve problems involving length and area. They interpret timetables. Students describe combinations of transformations. They solve problems using the properties of angles. Students compare observed and expected frequencies. They interpret and compare a variety of data displays including those displays for two categorical variables. They interpret secondary data displayed in the media.</p> <p>Students locate fractions and integers on a number line. They calculate a simple fraction of a quantity. They add, subtract and multiply decimals and divide decimals where the result is rational. Students calculate common percentage discounts on sale items. They write correct number sentences using brackets and order of operations. Students locate an ordered pair in any one of the four quadrants on the Cartesian plane. They construct simple prisms and pyramids. Students describe probabilities using simple fractions, decimals and percentages.</p>		<p>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.</p> <p>Students 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.</p> <p>Students 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.</p>	
Strands	Content descriptions	Content descriptions	Strands
Number	investigate everyday situations that use integers. Locate and represent these numbers on a number line ACMNA124	recognise situations, including financial contexts, that use integers; locate and represent integers on a number line and as coordinates on the Cartesian plane AC9M6N01	Number
	introduce the Cartesian coordinate system using all four quadrants ACMMG143		
	identify and describe properties of prime, composite, square and triangular numbers ACMNA122	identify and describe the properties of prime, composite and square numbers and use these properties to solve problems and simplify calculations AC9M6N02	
	compare fractions with related denominators and locate and represent them on a number line ACMNA125	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	
	add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers ACMNA128	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	
	solve problems involving addition and subtraction of fractions with the same or related denominators ACMNA126	solve problems involving addition and subtraction of fractions using knowledge of equivalent fractions AC9M6N05	
	make connections between equivalent fractions, decimals and percentages ACMNA131 Moved to Year 5		
	multiply decimals by whole numbers and perform divisions by non-zero whole numbers where the results are terminating decimals, with and without digital technologies ACMNA129	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	
	multiply and divide decimals by powers of 10 ACMNA130		
	find a simple fraction of a quantity where the result is a whole number, with and without digital technologies ACMNA127	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 Moved from Year 7	
	make connections between equivalent fractions, decimals and percentages ACMNA131 Moved to Year 5		
	investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies ACMNA132	approximate numerical solutions to problems involving rational numbers and percentages, including financial contexts, using appropriate estimation strategies AC9M6N08	
	select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers ACMNA123	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	

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Version 8.4		Version 9.0	
Algebra	continue and create sequences involving whole numbers, fractions and decimals. Describe the rule used to create the sequence ACMNA133	recognise and use rules that generate visually growing patterns and number patterns involving rational numbers AC9M6A01 Moved from Year 5	Algebra
	explore the use of brackets and order of operations to write number sentences ACMNA134	find unknown values in numerical equations involving brackets and combinations of arithmetic operations, using the properties of numbers and operations AC9M6A02 Moved from Year 7	
		<u>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</u> AC9M6A03	
Measurement	connect decimal representations to the metric system ACMMG135	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	Measurement
	convert between common metric units of length, mass and capacity ACMMG136		
	solve problems involving the comparison of lengths and areas using appropriate units ACMMG137	<u>establish the formula for the area of a rectangle and use it to solve practical problems</u> AC9M6M02 Moved from Year 7	
	interpret and use timetables ACMMG139	interpret and use timetables and itineraries to plan activities and determine the duration of events and journeys AC9M6M03	
	investigate, with and without digital technologies, angles on a straight line, angles at a point and vertically opposite angles. Use results to find unknown angles ACMMG141	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	
	<u>connect volume and capacity and their units of measurement</u> ACMMG138 Moved to Year 8		
Geometry		<u>compare the parallel cross-sections of objects and recognise their relationships to right prisms</u> AC9M6SP01	Space
	introduce the Cartesian coordinate system using all four quadrants ACMMG143	<u>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</u> AC9M6SP02 Moved from Year 7	
	investigate combinations of translations, reflections and rotations, with and without the use of digital technologies ACMMG142	recognise and use combinations of transformations to create tessellations and other geometric patterns, using dynamic geometric software where appropriate AC9M6SP03	
	<u>construct simple prisms and pyramids</u> ACMMG140		
Statistics	interpret and compare a range of data displays, including side-by-side column graphs for two categorical variables ACMSP147	interpret and compare data sets for ordinal and nominal categorical, discrete and <u>continuous numerical variables</u> using comparative displays or visualisations and digital tools; compare distributions in terms of mode, range and shape AC9M6ST01 Moved from Year 7	Statistics
	interpret secondary data presented in digital media and elsewhere ACMSP148	identify statistically informed arguments presented in traditional and digital media; discuss and critique methods, data representations and conclusions AC9M6ST02	
		<u>plan and conduct statistical investigations</u> 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	
Probability	describe probabilities using fractions, decimals and percentages ACMSP144	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 Moved from Year 5	Probability
	conduct chance experiments with both small and large numbers of trials using appropriate digital technologies ACMSP145	<u>conduct repeated</u> chance experiments and <u>run simulations</u> with an increasing number of trials using digital tools; compare observations with expected results and <u>discuss the effect on variation of increasing the number of trials</u> AC9M6P02	
	compare observed frequencies across experiments with expected frequencies ACMSP146		

Considerations for planning for the first year of implementation

In the initial year of implementing the Australian Curriculum: Mathematics v9.0, teachers need to consider the implications of content changes as they transition from v8.4.

The table below:

- identifies changes between v8.4 and v9.0 that may influence the sequence of students' learning
- outlines considerations for planning teaching and learning programs for the first year of implementation.

Year 5 content in v8.4	Year 6 content in v9.0	Considerations
create simple financial plans ACMNA106	use mathematical modelling to solve practical problems involving natural and rational numbers and percentages, including in <u>financial contexts</u> ; formulate the problems, choosing operations and efficient	In v9.0 financial contexts need to be provided for mathematical modelling. Students need to understand the language, processes, concepts and relationships relevant to that context. For example, purchasing items on sale requires an understanding of language and concepts such as sale, discount, percentage off, half price, marked price, selling price, rate and GST.

Year 5 content in v8.4	Year 6 content in v9.0	Considerations
	calculation strategies, and using digital tools where appropriate; interpret and communicate solutions in terms of the situation, justifying the choices made AC9M6N09	
describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction ACMNA107	recognise and use rules that generate visually growing patterns and number patterns involving rational numbers AC9M6A01 Moved from Year 5	Describing, continuing and creating patterns involving rational numbers (fractions and decimals) was content included in Year 5 v8.4. As this content has moved to Year 6 v9.0, teaching and learning programs need to provide opportunities for students to revise and consolidate conceptual understanding.
recognise that probabilities range from 0 to 1 ACMSP117	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 Moved from Year 5	Recognising that probabilities range from 0 to 1 was content included in Year 5 v8.4. As this content has moved to Year 6 v9.0, teaching and learning programs should provide opportunities for students to revise and consolidate conceptual understanding.

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