Year 2 standard elaborations — Australian Curriculum: Mathematics

Purpose

The standard elaborations (SEs) provide additional clarity when using the Australian Curriculum achievement standard to make judgments on a five-point scale. They can be used as a tool for:

- aligning curriculum, assessment and reporting, and connecting curriculum and evidence in assessment, so that what is assessed relates directly to what students have had the opportunity to learn

- continuing skill development from one year of schooling to another

- making judgments on a five-point scale based on evidence of learning in a folio of student work

- developing task-specific standards and grading guides.

Structure

The SEs are developed using the **Australian Curriculum achievement standard**. In Prep* to Year 6, the Mathematics SEs have been organised using the **content and proficiency strands**. Performance is frequently represented in terms of complexity and familiarity of the standard being assessed. Across the elaborations this is described according to:
AP — unfamiliar, MC — complex familiar, WW — simple familiar, EX — some simple familiar, BA — partial, isolated and obvious.

The Mathematics achievement standard describes the learning expected of students at each year level. Teachers use the achievement standard during and at the end of a period of teaching to make on-balance judgments about the quality of learning students demonstrate.

In Queensland the achievement standard represents the **working with (WW) standard** — a sound level of knowledge and understanding of the content, and application of skills. The SEs are presented in a **matrix**. The discernible differences or degrees of quality associated with the five-point scale are highlighted to identify the characteristics of student work on which teacher judgments are made. Terms are described in the Notes section following the matrix.

Year 2 Australian Curriculum: Mathematics achievement standard
By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information. Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter-hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They describe outcomes for everyday events. Students collect, organise and represent data to make simple inferences.

* Prep in Queensland is the Foundation Year of the Australian Curriculum and refers to the year before Year 1. Children beginning Prep in January must be five years of age by 30 June.

Year 2 Mathematics standard elaborations

		Applying (AP)	Making connections (MC)	Working with (WW)	Exploring (EX)	Becoming aware (BA)
		The folio of a student's work has the following characteristics:				
Number and algebra	**Understanding**	recognition of increasing and decreasing number sequences involving 2s, 3s, 5s, 10s and other sequences from any starting point	recognition of increasing and decreasing number sequences involving 2s, 3s, 5s and 10s from any starting point	recognition of increasing and decreasing number sequences involving 2s, 3s and 5s	recognition of aspects of increasing and decreasing number sequences involving 2s, 3s and 5s	fragmented recognition of aspects of increasing and decreasing number sequences involving 2s, 3s and 5s
		representation of multiplication and division by grouping into sets in unfamiliar situations	representation of multiplication and division by grouping into sets in complex familiar situations	representation of multiplication by grouping into sets, and division by grouping into sets	representation of aspects of multiplication by grouping into sets, and division by grouping into sets	directed representation of aspects of multiplication by grouping into sets, and division by grouping into sets
		association of collections of Australian coins and notes with their value and ordering of collections according to their value	association of collections of Australian coins and notes with their value	association of collections of Australian coins with their value	association of aspects of collections of Australian coins with their value	directed association of aspects of collections of Australian coins with their value
		division of collections and shapes into halves, quarters and eighths in unfamiliar situations and relating of the number of parts to the size of the fraction	division of collections and shapes into halves, quarters and eighths and relating of the number of parts to the size of the fraction	division of collections and shapes into halves, quarters and eighths	division of aspects of collections and shapes into halves, quarters and eighths	directed division of aspects of collections and shapes into halves, quarters and eighths

		Applying (AP)	Making connections (MC)	Working with (WW)	Exploring (EX)	Becoming aware (BA)
Number and algebra	**Fluency**	counting to and from 1000 and modelling, representing and ordering these numbers	counting to and from 1000 and modelling and representing these numbers	counting to and from 1000	counting using aspects of the sequence of numbers to and from 1000	directed counting using aspects of the sequence of numbers to and from 1000
	Problem-solving	identification of the missing element in a number sequence and description and representation of the pattern	identification of the missing element in a number sequence and description of the pattern	identification of the missing element in a number sequence	identification of the missing element in aspects of a number sequence	continuation of aspects of a number sequence
		performing of simple addition and subtraction calculations using a range of strategies in unfamiliar situations	performing of simple addition and subtraction calculations using a range of strategies in complex familiar situations	performing of simple addition and subtraction calculations using a range of strategies	performing of simple addition and subtraction calculations using strategies	directed performing of simple addition and subtraction calculations
	Reasoning	*Reasoning* is critical across all content strands in Mathematics. In Year 2, reasoning of number and algebra is not explicitly identified in the achievement standard. It appears in the content descriptions so there are opportunities to strengthen student reasoning.				

		Applying (AP)	Making connections (MC)	Working with (WW)	Exploring (EX)	Becoming aware (BA)
Measurement and geometry	**Understanding**	use of a calendar in unfamiliar situations to: • identify the date and locate specific information • identify the months included in seasons	use of a calendar to: • identify the date and locate specific information • identify the months included in seasons	use of a calendar to: • identify the date • identify the months included in seasons	guided use of a calendar to: • identify the date • identify the months included in seasons	directed use of a calendar to: • identify the date • identify the months included in seasons
		telling and representation of time to the quarter hour and explanation of the relationship between units of time	telling and representation of time to the quarter hour	telling of time to the quarter hour	guided telling of time to the quarter hour	directed telling of time
		recognition and description of the features of unfamiliar three-dimensional objects	recognition and description of the features of three-dimensional objects	recognition of the features of three-dimensional objects	guided recognition of the features of three-dimensional objects	directed recognition of the features of three-dimensional objects
	Fluency	ordering of shapes and objects using appropriate informal units accurately	ordering of shapes and objects using appropriate informal units	ordering of shapes and objects using informal units	guided ordering of shapes and objects using informal units	directed ordering of shapes and objects using informal units
		drawing of two-dimensional shapes and comprehensive description of key features	drawing of two-dimensional shapes and listing of key features	drawing of two-dimensional shapes	drawing of aspects of two-dimensional shapes	directed drawing of aspects of two-dimensional shapes
	Problem-solving	interpretation of maps and use of key features to follow and give directions	interpretation of simple maps and use of key features to follow and give directions	interpretation of simple maps	interpretation of aspects of simple maps	directed interpretation of aspects of simple maps
		explanation of the effects of one-step transformations including half and quarter turns in unfamiliar situations	explanation of the effects of one-step transformations including half and quarter turns	explanation of the effects of one-step transformations	guided explanation of the effects of one-step transformations	directed explanation of the effects of one-step transformations
	Reasoning	*Reasoning* is critical across all content strands in Mathematics. In Year 2, reasoning of measurement and geometry is not explicitly identified in the achievement standard. It appears in the content descriptions so there are opportunities to strengthen student reasoning.				

		Applying (AP)	Making connections (MC)	Working with (WW)	Exploring (EX)	Becoming aware (BA)
Statistics and probability	**Understanding**	making sense of collected information and identifying categories to classify and describe collected information	making sense of collected information and identifying categories to classify collected information	making sense of collected information	making sense of aspects of collected information	making statements about collected information
	Fluency	*Fluency* is critical across all content strands in Mathematics. In Year 2, fluency of statistics and probability is not explicitly identified in the achievement standard. It appears in the content descriptions so there are opportunities to strengthen student fluency.				
	Problem-solving	collection, organisation and representation of data to make inferences in unfamiliar situations	collection, organisation and representation of data to make inferences in complex familiar situations	collection, organisation and representation of data to make simple inferences	collection, organisation and representation of aspects of data to make simple inferences	directed collection, organisation and representation of aspects of data
	Reasoning	reasoned classification of outcomes of everyday events	classification of outcomes of everyday events	description of outcomes of everyday events	guided description of aspects of outcomes of everyday events	directed description of outcomes of aspects of everyday events

Key	shading emphasises the qualities that discriminate between the AP–BA descriptors
AP	applies the curriculum content; demonstrates a thorough understanding of the required knowledge; demonstrates a high level of skill that can be transferred to new situations
MC	makes connections using the curriculum content; demonstrates a clear understanding of the required knowledge; applies a high level of skill in situations familiar to them, and is beginning to transfer skills to new situations
WW	works with the curriculum content; demonstrates understanding of the required knowledge; applies skills in situations familiar to them
EX	exploring the curriculum content; demonstrates understanding of aspects of the required knowledge; uses a varying level of skills in situations familiar to them
BA	becoming aware of the curriculum content; demonstrates a basic understanding of aspects of required knowledge; beginning to use skills in situations familiar to them

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June 2019

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Notes

Australian Curriculum common dimensions

The SEs describe the qualities of achievement in the two dimensions common to all Australian Curriculum learning area achievement standards — understanding and skills.

Dimension	Description
understanding	the concepts underpinning and connecting knowledge in a learning area, related to a student's ability to appropriately select and apply knowledge to solve problems in that learning area
skills	the specific techniques, strategies and processes in a learning area

Terms used in Year 2 Mathematics SEs

The following terms are used in the Year 2 Mathematics SEs. Definitions are drawn from the ACARA Australian Curriculum Mathematics glossary (www.australiancurriculum.edu.au/f-10-curriculum/mathematics/glossary) and from other sources to ensure consistent understanding.

Term	Description
aspects	particular parts or features
classify; classification	arrange into named categories in order to sort, group or identify
complex familiar	students are required to choose and apply procedures in a situation involving a number of elements, components or steps in a context that has been a focus of prior learning
connection; connect	establish a link
description; descriptive; describe	give an account of characteristics or features
directed; direction	following the instructions of the facilitator
effective	meeting the assigned purpose in a considered and/or efficient manner to produce a desired or intended result
explanation; explanatory; explain	provide additional information that demonstrates understanding of reasoning and/or application; in mathematics this could include showing working to justify a response
fluency	students develop skills in choosing appropriate procedures, carrying out procedures flexibly, accurately, efficiently and appropriately, and recalling factual knowledge and concepts readily; students are fluent when they calculate answers efficiently, when they recognise robust ways of answering questions, when they choose appropriate methods and approximations, when they recall definitions and regularly use facts, and when they can manipulate expressions and equations to find solutions; in Year 2, *fluency* includes such things as readily counting numbers in sequences, using informal units iteratively to compare measurements, using the language of chance to describe outcomes of familiar chance events and describing and comparing time durations
guided; guidance	visual and/or verbal prompts to facilitate or support independent action

Term	Description
interpretation; interpret	explaining the meaning of information or actions; in the context of Mathematics, this involves giving meaning to information presented in various forms, e.g. words, symbols, diagrams, graphs
modelling	depicting a situation that expresses relationships, usually using concrete materials
partial	incomplete, half-done, unfinished
problem-solving	students develop the ability to make choices, interpret, formulate, model and investigate problem situations, and communicate solutions effectively; students formulate and solve problems when they use mathematics to represent unfamiliar or meaningful situations, when they design investigations and plan their approaches, when they apply their existing strategies to seek solutions, and when they verify that their answers are reasonable; in Year 2, *problem-solving* includes such things as formulating problems from authentic situations, making models and using number sentences that represent problem situations, and matching transformations with their original shape
range	covers the scope of relevant situations or elements
reasoning	students develop an increasingly sophisticated capacity for logical thought and actions, such as analysing, proving, evaluating, explaining, inferring, justifying and generalising; students are reasoning mathematically when they explain their thinking, when they deduce and justify strategies used and conclusions reached, when they adapt the known to the unknown, when they transfer learning from one context to another, when they prove that something is true or false and when they compare and contrast related ideas and explain their choices; in Year 2, *reasoning* includes such things as using known facts to derive strategies for unfamiliar calculations, comparing and contrasting related models of operations and creating and interpreting simple representations of data
represent; representation	use words, images, symbols or signs to convey meaning
statement; state	a sentence or assertion
understanding	students build a robust knowledge of adaptable and transferable mathematical concepts; they make connections between related concepts and progressively apply the familiar to develop new ideas; they develop an understanding of the relationship between the 'why' and the 'how' of mathematics; students build understanding when they connect related ideas, when they represent concepts in different ways, when they identify commonalities and differences between aspects of content, when they describe their thinking mathematically and when they interpret mathematical information; in Year 2, *understanding* includes such things as connecting number calculations with counting sequences, partitioning and combining numbers flexibly and identifying and describing the relationship between addition and subtraction and between multiplication and division
unfamiliar	students are required to choose and apply procedures in a situation involving a number of elements, components or steps in a context in which students have had limited prior experience
use; use of	to operate or put into effect