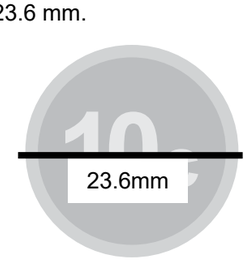
Year 6 Mathematics

ACiQ | v9.0

Australian Curriculum v9.0: Using complexity and familiarity to create questions in Mathematics

The QCAA Mathematics standards elaborations use complexity and familiarity to describe the discernible differences between performance levels. Complexity and familiarity are described in the standard elaborations Notes section — Table 2. This resource provides examples of questions with different levels of complexity and familiarity for Year 6.

Aspect of the achievement standard	Related content description/s	Examples of evidence	Mathematical proficiencies
They use all 4 operations with decimals and connect decimal representations of measurements to the metric system.	**Number** • 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 **Measurement** • 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	• connecting decimal representations of measurements to the metric system	Understanding
		• using all 4 operations with decimals	Fluency
Students convert between common units of length, mass and capacity.	**Measurement** • 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	• converting between common units of – length – mass – capacity	Fluency

Complexity annotations	Complex unfamiliar questions (A or equivalent)	Familiarity annotations	Complexity annotations	Complex familiar questions (B or equivalent)	Familiarity annotations	Complexity annotations	Simple familiar questions (C or equivalent)	Familiarity annotations
Students make connections between Number and Measurement by applying knowledge of place value to multiply and divide by powers of 10 without a calculator, and convert between common metric units of length. Interpretation is required to develop a response.	10 cent coins have a length (diameter) of 23.6 mm.  Diagram not to scale A school raised $150 for charity by making a line of 10 cent coins touching end to end. How long was the line of coins? Give your answer in metres (m). Show all working.	All the information to solve the problem is not immediately identifiable. The required procedure is not clear from the way the problem is posed. The context is unfamiliar as length in the context of diameter has not been a focus. Students draw on money knowledge from previous year levels.	Students make connections between Number and Measurement concepts. Students convert between units of mass, operate with metric units of mass, and use rounding and estimation to check their answers. Some interpretation is required to develop a response.	Every month my pet birds eat 1.8 kg of bird seed and 105 g honey sticks. In ten months time, I estimate my birds would have eaten 20 kg altogether. Is this a reasonable estimate? Show all working.	All the information to solve the problem is identifiable. The required procedure is clear from the way the problem is posed. The context is familiar to students as it was a focus in the teaching and learning program.	Students convert between common units of length, mass and capacity by multiplying and dividing by multiples of powers of 10 without a calculator. The question is broken into parts.	Convert between the following metric units: a. 2.5 m = _____ cm b. 150 mm = _____ cm c. 33 kg = _____ g d. 5 728 kg = _____ t e. 4.2 L = _____ mL f. 100 000 mL = _____ kL	All the information to solve the problem is identifiable. The required procedure is clear from the way the problem is posed. The context is familiar to students as converting between metric units was a focus in the teaching and learning program.