Year 5 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 5.

Aspect of the achievement standard	Related content description/s	Examples of evidence	Mathematical proficiencies
Students use their proficiency with multiplication facts and efficient calculation strategies to multiply large numbers by one- and two-digit numbers and divide by single-digit numbers.	**Number** • solve problems involving multiplication of larger numbers by one- or two-digit numbers, choosing efficient calculation strategies and using digital tools where appropriate; check the reasonableness of answers AC9M5N06 • solve problems involving division, choosing efficient strategies and using digital tools where appropriate; interpret any remainder according to the context and express results as a whole number, decimal or fraction AC9M5N07	• multiplying large numbers by one-digit numbers using proficiency with multiplication facts and efficient calculation strategies • multiplying large numbers by two-digit numbers using proficiency with multiplication facts and efficient calculation strategies • dividing large numbers by single-digit numbers using proficiency with multiplication facts and efficient calculation strategies	Fluency
They check the reasonableness of their calculations using estimation.	**Number** • check and explain the reasonableness of solutions to problems including financial contexts using estimation strategies appropriate to the context AC9M5N08	• checking the reasonableness of calculations using estimation	Reasoning

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 use their proficiency with multiplication facts and efficient calculation strategies to divide numbers by single-digit numbers. They check the reasonableness of their calculations using estimation. Interpretation is required to develop a response.	Angela is drawing a star with 9 points. She knows a full turn is 360°. She wants the points of her star to be equally spaced out. How many degrees should Angela measure between each point? Show your working below.	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 it was not the main focus in teaching and learning. Measuring and constructing angles was covered in a previous unit and is assumed knowledge.	Students use their proficiency with multiplication facts and efficient calculation strategies to multiply and divide numbers by single-digit numbers. They check the reasonableness of their calculations using estimation. Some interpretation is required to develop a response.	Sam knows that 341 × 4 = 1364. He is going to share 1364 lollies into 4 equal groups. Sam estimates that each group should contain 34 lollies when he is finished. Is Sam's estimate correct? Give a clear reason for your answer.	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. Dividing and checking for reasonableness have been a focus of teaching and learning.	Students use their proficiency with multiplication facts and efficient calculation strategies to multiply large numbers by one- and two-digit numbers and divide by single-digit numbers. The questions are broken into scaffolded parts.	Determine without using a calculator Question 1 a. 412 × 10 = b. 412 × 5 = c. 412 × 15 = Question 2 a. 900 ÷ 3 = b. 6 ÷ 3 = c. 906 ÷ 3 =	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.