



Workcard

Number

n62w2

Level: 6
Strand: Number

Substrand: Understand Operations

Major TASK

Here is a description of a level 6 student in this strand of number. Prove that you are a level 6 student. Give examples of how you can do these things.

N 6.2

The student uses ratios and rates to describe the relationship between two quantities and finds one quantity from another in situations where familiarity with the context helps understand the ratio or rate.

This will be evident when students, for example:

- use their commonsense knowledge of context to help them select operations in situations involving familiar rates such as price, speed, scale, simple interest, e.g. in converting actual distances to map distances with a scale ratio of 0.15, use their knowledge that maps are typically smaller
- check that their answer makes sense in the context and if not work out whether the error was in the choice of operation or in the computation
- make routine choices of operations to find quantities from familiar rates, e.g. calculate interest for six months at 11% per annum; calculate the number of worm tablets to give a dog based on its weight and the information on the label
- recognise direct and inverse proportion in familiar situations, e.g. at a fixed rate of pay, income will be directly proportional to hours worked; with a fixed amount of money, the number you can buy will be inversely related to the price of each
- identify assumptions needed to use a ratio, e.g. 'What do we need to assume in order to calculate the quantities needed to triple a recipe? Would the same assumptions work for cooking time?'
- use a method such as the unitary method to solve problems involving proportional quantities where the context helps make sense of ratios, e.g. 'Find the price of 4.5 kg of fruit given the price of 3 kg by first calculating the price of 1 kg'
- increase or decrease a quantity in a given ratio or by a given percentage, e.g. 'Convert a recipe for 6 to one for 10'
- divide a quantity in a given ratio, e.g. 'Share a kilogram pack of seed between two areas to be planted, one of 20 m² and the other of 30 m²'.

Reflection

What did you do well in this activity?

What could have you improved?

What new things have you learnt?