

# Fractions and percentages

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Pearson Edexcel GCSE Mathematics 1MA1 • L010

Foundation and Higher • Lesson resources

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## Purpose

Use fractions and percentages as operators, recover a whole from a known fraction, and explain the chosen reference amount.

## Vocabulary

Operator: an instruction that scales a quantity. Reference amount: quantity treated as the whole or 100%. Unit fraction: one equal part. Original amount: quantity before a stated operation.

## Why the method works

Three fifths of 80 is  $(80 \div 5) \times 3 = 48$  because five equal parts make the whole. The same calculation is  $80 \times 0.6$ . For 15% of 80, 10% is 8 and 5% is 4, so the result is 12. A decimal multiplier gives  $80 \times 0.15 = 12$ .

## Method and checking

Name the whole and write the fraction or decimal multiplier. Calculate, include units and check size. To recover a whole from a known fraction, find one part then all parts, or divide by the fraction. An operator above 1 increases the quantity.

## Common errors and next attempt

If 20% is treated as 20, show  $20/100 = 0.2$ . If the given part is treated as the whole, draw equal parts and label what is known. Recheck  $3/4$  of  $28 = 21$  and a whole with  $2/5$  equal to 18 is 45.