

# Teacher guide and workbook answers

Pearson Edexcel GCSE Mathematics 1MA1 • L010

60 minutes • Foundation and Higher • Teacher use only • Lesson resources

REACH FOR THE STAR | GCSE MATHEMATICS

## Purpose and prerequisites

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

L009 FDP equivalence; L007 fraction multiplication/division; unit and money notation.

Selected specification content: N11 N12 R3 R9. These lessons revisit shared content; they do not complete every aspect of those statements.

## Preparation and support

Prepare mini-whiteboards, printed fallbacks and a teacher calculator. Use fraction strips, equal-part bars or a ratio table as appropriate. Confirm save/export/restore in the intended environment; browser QA remains pending. Distribute only the learner package.

Access: pre-teach vocabulary and read symbols aloud. Scaffold: model the first decision, offer a worked-example or inverse-check frame. Core: remove prompts for A2 and P1–P2. Stretch: C1–C2 deepen reasoning for either tier. Record the support used, not a fixed ability label.

## Evidence and pacing

The delivery map totals 60 minutes. Use the recall and hinge to select a repair; the suggested one-third error trigger is a planning judgement, not a validated threshold. If errors are widespread, use two minutes from independent practice and defer C2. P1–P2 need teacher marking. The mini-test and exam practice are delayed/additional activities, not extra tasks squeezed into the hour.

15% of £60: A £9, B £15, C £900. A;  $0.15 \times 60 = 9$ . B confuses rate with amount; C omits division by 100.

## Recall and guided-practice answers

### R1

60%; 0.15. Use hundredths.

### R2

$\frac{1}{2}$ . Cancel a common factor 3.

### R3

16; 8. Find one equal part.

### D1

21. One quarter is 7; three quarters are 21.

### D2

£21.  $30\% = £18$  and  $5\% = £3$ ; or  $0.35 \times 60$ .

### D3

36.  $100\% = 24$  and  $50\% = 12$ .

### D4

27. One third is 9; three thirds are 27.

## Application and challenge answers

### A1

8; 4; 12; 120.  $150\% = 1.5$ , greater than 1.

### A2

56; £6; 36.  $12.5\% = \frac{1}{8}$ ; recover one quarter before four.

### A3

3 learners. 12 walk; 25% of 12 is 3.

### C1

Yes, both 10;  $(20/100) \times 50 = (50/100) \times 20$ . Multiplication commutes; the same product is divided by 100.

### C2

50, since one fifth is 10. Multiplying again finds  $\frac{3}{5}$  of the part, not the whole. Check  $(\frac{3}{5}) \times 50 = 30$ .

Calculator guidance: Optional check after A2:  $(7 \div 8) \times 64 = 56$ ;  $0.125 \times 48 = 6$ ;  $27 \div 0.75 = 36$ . Use the ordinary decimal multiplier so calculator-specific percentage-key behaviour is avoided.

## Independent evidence and next steps

### P1

0.35×80 or equivalent M1; £28 A1. Units required in context.

### P2

24 kg B1;  $(\frac{3}{4}) \times 24 = 18$  B1. Teacher checks inverse interpretation.

### P3

Individual reflection. Record support and delayed evidence; completion is not mastery.

### F1

18; 30. Use exact values.

### F2

Rise £5; new price £55. A percentage amount and the new total are different quantities.

Retrieval answers: 24, 9, 30, 35, 5, 6. Exact signed decimals/fractions/mixed numbers are accepted; unsupported notation goes to review. No automatic method marks. For rounding, equivalent numerical values may pass retrieval; the teacher checks stated accuracy and required trailing zeros in written work.

## Reteaching and release

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  $\frac{3}{4}$  of 28=21 and a whole with  $\frac{2}{5}$  equal to 18 is 45.

Practice feedback is intentionally visible. Full assessment answers, this guide and delivery notes are teacher-only. Local saving is browser dependent; no account service is included. Completed resources enter Review; human approval and outstanding browser checks remain required.

## Optional extension answers

### Stretch

Find 35% of £240 using 10%, 5% and a combination.

Answer and reasoning:  $10\% = £24$ ,  $5\% = £12$ , so  $35\% = £84$ .

### Deep challenge

A class has 18 of 24 learners present. Express attendance as a simplified fraction and percentage.

Answer and reasoning:  $18/24 = 3/4 = 75\%$ .

## Activate Learning lesson cycle

Connect & Check: state the objective and diagnose prior knowledge. Share: pairs predict and compare methods. Present: explain or uncover the model. Apply: fade support for independent practice and optional stretch. Recall & Review: use a fresh question and feedback to decide the next step.

# Recall & Review: feedback and extension integration

Source-integrated WWW/EBI and extension page

## Lesson L010: Fractions and percentages of amounts

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

### Timing for a 60-minute lesson

0-7 Connect & Check; 7-14 Share; 14-25 Present/model; 25-44 Apply route choice/practice; 44-52 independent exam-style check; 52-60 Recall & Review, WWW/EBI and next step.

### Recall & Review evidence

At the end of the lesson, solve a fresh question without prompts, explain a check, correct one error and record the next practice step.

### What Went Well (WWW)

I selected a suitable representation or multiplier and kept the reference amount clear.

### Even Better If (EBI)

I will state the whole/part, show each operation and check that the size of my answer is reasonable.

### Integrated stretch and deep challenge

Stretch: Find 35% of £240 using 10%, 5% and a combination.

Deep challenge: A class has 18 of 24 learners present. Express attendance as a simplified fraction and percentage.

### Teacher use

Use the WWW/EBI prompts to write mathematics-specific feedback linked to the objective. Do not accept generic praise; feedback should identify the method, representation, reasoning or checking step that improved, then set a fresh next-step question.

Assessment evidence to inspect: Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Non-calculator core; optional calculator check.