

Teacher guide and workbook answers

Pearson Edexcel GCSE Mathematics 1MA1 • L013

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

REACH FOR THE STAR | GCSE MATHEMATICS

Purpose and prerequisites

Interpret ratios, simplify them and share quantities using equal parts while distinguishing part-to-part from part-to-whole.

L005 HCF; L006 equivalent fractions; L010 fractions of quantities and recovering wholes.

Selected specification content: N11 R4 R5 R6 R8. 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.

Red:blue=2:3. Red fraction of the total? A $\frac{2}{3}$, B $\frac{2}{5}$, C $\frac{3}{5}$. B; five parts form the whole.

Recall and guided-practice answers

R1

$\frac{2}{3}$; 6. Divide both entries by the same factor.

R2

20. Five parts of 10; choose two.

R3

32. One quarter is 8.

D1

3:5. Divide both terms by 5.

D2

$\frac{3}{7}$ and $\frac{4}{7}$. Seven parts make the whole.

D3

£24 and £32. Seven parts at £8 each.

D4

A=15; total=50. 35 corresponds to seven parts.

Application and challenge answers

A1

All 2:3. The relative amounts, not the absolute sizes.

A2

45 and 27; $B=35$. The second problem gives a share, not the total.

A3

150 ml concentrate and 600 ml water. Five parts at 150 ml; sum 750 ml.

C1

$A=8$ is correct. Total=20, so A is $\frac{2}{5}$ of the total. $\frac{2}{3}$ compares A with B, not A with $A+B$.

C2

Difference is 2 parts=14; one part=7; $A=21$, $B=35$. The given difference is not the total.

Calculator guidance: Optional check after A3: $750 \div 5 \times 1 = 150$; $750 \div 5 \times 4 = 600$. Check $150 + 600 = 750$ and $150:600 = 1:4$. A correct sum alone does not establish the ratio.

Independent evidence and next steps

P1

One part £9 M1; £18 and £45 A1 (both). Check sum and ratio.

P2

$\frac{3}{8}$ B1; total has $3+5=8$ equal parts B1. Part-to-whole differs from part-to-part.

P3

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

F1

3:4; 15 and 25. Check both total and relative size.

F2

5 m. Divide both corresponding quantities by 2.

Retrieval answers: 8, 15, 3, $\frac{2}{5}$, 35, 28. 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 red is called $\frac{2}{3}$ of the whole for 2:3, draw five equal parts. If learners divide the total by only one ratio term, label all parts. If units differ, convert first. Recheck £40 shared 3:5 gives £15 and £25.

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

Split £126 in ratio 2:3:4 and check the parts total.

Answer and reasoning: Nine parts at £14: £28, £42, £56; total £126.

Deep challenge

A sum is split $A:B=3:5$ and $B:C=2:3$. Find $A:B:C$ in whole numbers.

Answer and reasoning: Equalise B at 10: $A:B=6:10$ and $B:C=10:15$, so 6:10:15.

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 L013: Ratio and sharing

Objective: Interpret ratios, simplify them and share quantities using equal parts while distinguishing part-to-part from part-to-whole.

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: Split £126 in ratio 2:3:4 and check the parts total.

Deep challenge: A sum is split $A:B=3:5$ and $B:C=2:3$. Find $A:B:C$ in whole numbers.

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.