

Teacher guide and workbook answers

Pearson Edexcel GCSE Mathematics 1MA1 • L009

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

REACH FOR THE STAR | GCSE MATHEMATICS

Purpose and prerequisites

Convert between fractions, decimals and percentages, and compare proportions on a consistent basis.

L006 fraction equivalence; L007 division; L003 decimal place value and scaling by 100.

Selected specification content: N10 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.

0.35 equals A 0.35%, B 3.5%, C 35%. C because $0.35 = 35/100$.

Recall and guided-practice answers

R1

$\frac{1}{4}$; $\frac{3}{4}$. Divide numerator and denominator by 25.

R2

7; 0.35. Use place value.

R3

2. Multiply by $\frac{10}{3}$.

D1

0.35; 35%. $\frac{7}{20} = \frac{35}{100}$.

D2

$\frac{3}{8}$; 37.5%. $\frac{375}{1000}$ simplifies by 125.

D3

$\frac{3}{2}$; 1.5. A percentage can exceed one whole.

D4

70%. Compare the part with its own whole.

Application and challenge answers

A1

40%; 4%; 0.4%; 140%. Multiplying by 100 preserves proportion when the % unit is introduced.

A2

0.375; 37.5%; 13/20; 3/5, 61%, 0.62. The ordered percentages are 60%, 61%, 62%.

A3

A: 75%, compared with B: 70%. Different totals require proportions, not just scores.

C1

No: $33\% = 33/100$; $1/3 - 33/100 = 1/300$. $1/3 = 33 \frac{1}{3}\%$; an approximation must be labelled.

C2

For example $150\% = 1.5 = 3/2$, one and a half of the reference whole. Other equivalent examples above 1 accepted.

Calculator guidance: Optional check after A3: $(18 \div 24) \times 100 = 75$ and $(14 \div 20) \times 100 = 70$. Enter the part divided by the whole. A decimal display of $1 \div 3$ is rounded; it does not make 0.33 exact.

Independent evidence and next steps

P1

9/20 B1; 45% B1. Teacher checks both requested forms.

P2

7/10=70% B1; 7/10 is larger B1. State which quantity is larger.

P3

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

F1

1/8; 12.5%. 125/1000 simplifies by 125.

F2

12; divide 60 into five equal groups. We will scale amounts by fractions and percentages.

Retrieval answers: 0.75, $\frac{3}{5}$, 35, 1.25, 8, $\frac{3}{4}$. 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 0.4 becomes 0.4%, return to four tenths = forty hundredths. If 150% is rejected, show one and a half wholes. If a rounded decimal is treated as exact, compare $\frac{1}{3}$ with $\frac{33}{100}$. Recheck $0.07=7\%$ and $\frac{3}{5}=60\%$.

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.

Higher route and prerequisites

Higher route: replace the 2-minute A3 feedback and the two 4-minute Challenge discussions with this 10-minute taught extension. Retain core P1–P2. Set HX1–HX2 as the final four minutes of that alternative, and use the shared challenges later if needed. The core route remains 60 minutes; the extension is not an additional compulsory ten minutes. Route choice reflects tier curriculum, not temporary support needs.

Equivalent fractions; place value; understanding $10x - x = 9x$. Model the algebra explicitly before independent work.

Use the Higher Extension and Teacher Higher Extension Answers documents. Alternative slides follow the core deck. Their zero minutes in the core total mean replacement slides, not zero teaching time; their subtitles state the 3 + 3 + 2 + 2 minute allocation.

A terminating decimal such as 0.27 equals $27/100$, while $0.272727\dots$ equals $3/11$. Dots in this resource explicitly mean the named block repeats forever. If subtracting decimals is insecure, align place values first. Mixed non-repeating prefixes will be revisited with algebra.

Optional extension answers

Stretch

Convert $\frac{7}{20}$ into a decimal and percentage, then order it with 0.3 and 32%.

Answer and reasoning: $\frac{7}{20}=0.35=35\%$; order 0.3, 32%, $\frac{7}{20}$.

Deep challenge

A learner claims $0.125=12.5/10$ percent. Correct the conversion.

Answer and reasoning: $0.125 \times 100 = 12.5\%$, not 1.25%.

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 L009: Fractions decimals and percentages

Objective: Convert between fractions, decimals and percentages, and compare proportions on a consistent basis.

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: Convert $\frac{7}{20}$ into a decimal and percentage, then order it with 0.3 and 32%.

Deep challenge: A learner claims $0.125=12.5/10$ percent. Correct the conversion.

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.