

Teacher guide and workbook answers

Pearson Edexcel GCSE Mathematics 1MA1 • L006

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

REACH FOR THE STAR | GCSE MATHEMATICS

Purpose and prerequisites

Explain equivalence, simplify fractions, convert mixed and improper forms and compare fractions exactly.

L005 factors and HCF; multiplication/division; a fraction represents equal parts of one whole.

Selected specification content: N1 N2 N10. 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.

Which equals $\frac{2}{3}$? A $\frac{3}{4}$, B $\frac{4}{6}$, C $\frac{2}{6}$. B; A adds one to each, C changes only the denominator.

Recall and guided-practice answers

R1

6. Common factors 1,2,3,6.

R2

23. Multiply before adding.

R3

0.6. $0.60 > 0.56$.

D1

12/20. Each fifth is split into four twentieths.

D2

3/5. Divide numerator and denominator by 5.

D3

17/5. Three wholes contain fifteen fifths.

D4

$2 \frac{4}{5}$; $\frac{3}{4}$ is larger because $\frac{6}{8} > \frac{5}{8}$. Remainder stays over the original denominator.

Application and challenge answers

A1

$\frac{3}{6}$; $\frac{5}{10}$; both simplify to $\frac{1}{2}$. Equivalent forms can look different.

A2

$\frac{17}{6}$; $4\frac{3}{4}$; $\frac{2}{3} = \frac{8}{12} < \frac{9}{12} = \frac{3}{4}$. Common units make the comparison meaningful.

A3

Yes: $1\frac{3}{4} = \frac{4}{4} + \frac{3}{4} = \frac{7}{4}$ litres. Same value and units.

C1

$\frac{3}{5} = \frac{18}{30}$; $\frac{4}{6} = \frac{20}{30}$, so not equal. Adding changes the ratio of parts.

C2

For example $\frac{7}{12}$: $\frac{1}{2} = \frac{6}{12} < \frac{7}{12} < \frac{8}{12} = \frac{2}{3}$. Other valid fractions with exact justification accepted.

Calculator guidance: Optional check: enter $2 \div 3$ and $4 \div 6$. Matching displays support the equivalence, but the exact fraction argument explains why. Do not replace exact fractions with rounded decimals.

Independent evidence and next steps

P1

$\frac{3}{4}$ B1; divide both entries by 7 B1. Teacher checks explanation.

P2

$\frac{15}{18}$ and $\frac{14}{18}$ B1; $\frac{5}{6}$ is larger B1. Equivalent correct comparison accepted.

P3

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

F1

$\frac{11}{7}$; $\frac{2}{3}$. Retrieve conversion and simplification.

F2

$\frac{3}{6}$ and $\frac{2}{6}$. Equal units will allow addition.

Retrieval answers: $\frac{2}{3}$, $\frac{9}{4}$, $2\frac{1}{5}$, 15, 6, 12. 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 learners compare only numerators, use equal-length fraction strips. If they add to both entries, test $\frac{1}{2}$ versus $\frac{2}{3}$. If mixed conversion fails, write $2=\frac{8}{4}$ before adding $\frac{3}{4}$. Recheck $\frac{9}{15}=\frac{3}{5}$ and $1\frac{2}{5}=\frac{7}{5}$.

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

Simplify $\frac{42}{70}$ and give two different fractions equivalent to it.

Answer and reasoning: $\frac{3}{5}$; examples $\frac{6}{10}$ and $\frac{9}{15}$.

Deep challenge

A fraction is equivalent to $\frac{5}{8}$ and its numerator is 35. Find its denominator and justify.

Answer and reasoning: Multiplier 7, so denominator 56.

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

Lesson L006: Fractions and equivalent forms

Objective: Explain equivalence, simplify fractions, convert mixed and improper forms and compare fractions exactly.

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 one check, correct one error and record the next practice step.

What Went Well (WWW)

I selected an efficient numerical method, showed the key steps clearly and checked the sign, size or accuracy of my answer.

Even Better If (EBI)

I will make the place-value, sign or operation decision explicit and use estimation or an inverse calculation to check a fresh question.

Integrated stretch and deep challenge

Stretch: Simplify $42/70$ and give two different fractions equivalent to it.

Deep challenge: A fraction is equivalent to $5/8$ and its numerator is 35. Find its denominator and justify.

Teacher use

Use the What Went Well (WWW) and Even Better If (EBI) prompts to write mathematics-specific feedback linked to the objective. Do not accept generic praise: 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.