

Teacher guide and workbook answers

Pearson Edexcel GCSE Mathematics 1MA1 • L024

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

REACH FOR THE STAR | GCSE MATHEMATICS

Purpose and prerequisites

Use independent evidence across number, proportion and algebra to identify a specific error and demonstrate a repaired method.

L001–L023 taught content; diagnostic results determine which repair route is used.

Selected specification content: N2 N8 R5 R9 A2 A4 A17 A22 A25. 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 ratio tables, algebra tiles, balance diagrams and number lines 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.

A learner has $2x+3=11$ then $2x=11$. What failed? A equality was not preserved, B multiplication is impossible, C x must be negative. Answer A; subtract 3 from both sides.

Recall and guided-practice answers

R1

$\frac{5}{6}$; 12. Record the method as well as the answer.

R2

15 and 25; $x=5$. Keep proportion and equation evidence separate.

R3

$2x-6$; 16. Multiply both terms; substitute $n=5$.

D1

$\frac{11}{12}$. $\frac{9}{12} + \frac{2}{12}$.

D2

£72. 54 is 75% of original.

D3

$x=7$; $3(7-2)=15$. Divide before adding, or expand correctly.

D4

$4n+2$. Difference 4 and first term 2 above 4.

Application and challenge answers

A1

$11/12$; $8/3$. Addition needs common units; division counts quarter units.

A2

$x=6$; $-2x+8$; $x=(y-2)/3$. Use balanced steps, signed distribution and grouped numerator.

A3

6 visits; £23. Seven visits would cost £26. $5+3v \leq 24$ gives $v \leq 19/3$.

C1

A fresh independent task after a delay, with explanation and recorded support. Immediate repetition can reflect memory of answers.

C2

Yes: $1.25 \times 0.8 = 1$. A 25% fall leaves 0.9375 of original. Percentage changes use different bases; test £100.

Calculator guidance: Optional check after A3: $5+3 \times 6 = 23$ and $5+3 \times 7 = 26$. The maximum integer decision depends on the budget, not on rounding to the nearest integer.

Independent evidence and next steps

P1

$x=7$ B1; both sides equal 22 B1. Independent transfer after repair.

P2

18 and 45 B1 both; seven equal parts B1. The total is shared over 2+5 parts.

P3

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

F1

17/20; $x=4$. Use a delayed check.

F2

115°. Angles on a straight line sum to 180°; $180-65=115$.

Retrieval answers: 5/6, 12, 15, 5, 16, -5. 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

Fraction error: rebuild common units. Ratio error: label total versus difference. Algebra error: mark operations on both sides. Inequality error: test an inside and outside value. Recheck with fresh numbers after one day and one week.

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 activities

Allow 10–15 minutes for learners who have secured the main practice. Show a method, explain a check and justify your conclusion.

Stretch

Solve $2x+5=17$, then give the third term of $3n+2$.

Answer and reasoning: $x=6$; third term=11.

Deep challenge

A learner extends 2,5,8,11 with 15. Diagnose and find the 20th term.

Answer and reasoning: Common difference is 3, next 14; nth term $3n-1$ gives term 20=59.

Ask for a fresh independent explanation before deciding that the method is secure.

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 L024: Cumulative checkpoint and feedback

Objective: Use independent evidence across number, proportion and algebra to identify a specific error and demonstrate a repaired method.

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 used my working and assessment evidence to identify the exact mathematical step that was secure and the specific misconception that needs attention.

Even Better If (EBI)

I will correct one precise step, explain why the correction works and complete a fresh delayed question without the original scaffold.

Integrated stretch and deep challenge

Stretch: Solve $2x+5=17$, then give the third term of $3n+2$.

Deep challenge: A learner extends 2,5,8,11 with 15. Diagnose and find the 20th term.

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: Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. Non-calculator core; optional calculator check.