

Number checkpoint

Pearson Edexcel GCSE Mathematics 1MA1 • L012
Foundation and Higher • 60 minutes • Lesson resources

REACH FOR THE STAR | GCSE MATHEMATICS

Demonstrate cumulative number understanding, diagnose the cause of an error and verify a repair independently.

Work without a calculator except where a check is invited. Write on the lines or replace them with typed answers. Attempt before reading intentional practice feedback.

Connect & Check

Checkpoint: evidence at one point in learning. Diagnostic: used to choose teaching. Reference whole: quantity treated as 1 or 100%. Method mark: credit for a valid mathematical step.

R1

Unaided checkpoint: calculate $-12 - (-7)$ and $1/3 + 1/4$.

R2

Unaided checkpoint: find HCF of 18 and 30; convert 0.35 to a simplified fraction.

R3

Unaided checkpoint: find 15% of 80; recover the original if 20% off gives £64.

Share | In pairs, predict the first step for this problem: Different errors need different repairs. Adding denominators is a unit error; reversing a percentage with the wrong base is a reference error; a decimal factor error is a place-val Compare your reasons before using the worked model.

Present through worked examples

Different errors need different repairs. Adding denominators is a unit error; reversing a percentage with the wrong base is a reference error; a decimal factor error is a place-value error. First identify the decision, then choose a representation and check.

D1

Model repair: $\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$, not $\frac{2}{5}$. Now repair $\frac{2}{3} + \frac{1}{6} = \frac{3}{9}$.

D2

Model repair: 15% of 80 = $0.15 \times 80 = 12$, not 120. Now find 12.5% of 48.

D3

Model repair: £64 after 20% off means $64 \div 0.8 = £80$. Now recover an original if 25% off gives £54.

D4

Model check: original £80, after 20% off £64; $80 \times 0.8 = 64$. Check your £72 answer after a 25% reduction.

Apply with less support

Complete R1–R3 unaided as a short checkpoint. Tag each error: units, operation, scale or reference whole. Use the matching D example, then A and P tasks without the prompt. Record a fresh delayed check; do not infer a grade or fixed tier from this lesson.

A1

Fresh repair: calculate $\frac{3}{4} + \frac{1}{6}$, then $(\frac{3}{4}) \div (\frac{1}{6})$. Explain the different methods.

A2

Find 35% of 120; simplify $\frac{18}{30}$; find LCM of 6 and 15.

A3

A £90 jacket is reduced by 20%, then a £6 voucher is deducted. Find the final price. Would subtracting the voucher first give the same answer?

Optional support: Use twelfths for the sum.

Optional check after A3: enter $90 \times 0.8 - 6$ and $(90 - 6) \times 0.8$. Expect 66 and 67.2. Brackets record the order. Use calculator results to check arithmetic, not to replace explanation.

Apply and extend reasoning

C1

A learner scores 6/6 on a repeated quiz immediately after seeing answers. What additional mathematical evidence is needed? Give a fresh test question.

C2

A £100 price rises 25%, then falls 20%. Does it return to £100? Explain, and compare a 25% fall after the rise.

Intentional practice feedback — read after attempting

A1: 11/12; 9/2.

A2: 42; 3/5; 30.

A3: £66; no, voucher first gives £67.20.

C1: Independent explanation and a fresh delayed problem; e.g. recover original from £45 after 25% off: £60.

C2: Yes: $1.25 \times 0.8 = 1$. A 25% fall gives £93.75.

Correct one response and explain your change. Stretch is available to either tier; temporary support needs do not determine entry tier.

Recall & Review through retrieval

Work without notes. Six retrieval points; this attempt does not establish mastery. Equivalent exact numeric forms are accepted. Where accuracy is requested, also state the requested form in your written work.

Q1 $-10 - (-6)$

Q2 HCF of 20 and 30

Q3 $\frac{1}{2} + \frac{1}{3}$

Q4 0.45 as a fraction

Q5 15% of 80

Q6 Original if 20% off gives 64

Intentional retrieval feedback

Q1 -4 ; Q2 10; Q3 $\frac{5}{6}$; Q4 $\frac{9}{20}$; Q5 12; Q6 80. Correct and retry tomorrow, then in one week.

Prove independently and improve

P1–P2: five minutes without notes; 4 marks. Your teacher reviews explanations and method marks.
P3 has no mark.

P1

Calculate $5/6 - 1/4$, showing a common denominator. [2]

P2

£81 is the price after a 10% reduction. Find the original and check. [2]

P3

Name one decision you can now explain. Set a fresh question and a date for checking it without support.

Teacher feedback: _____

Fresh question and retry date: _____

Delayed independent evidence: _____

Prepare for the next lesson

L013: Ratio and sharing

F1

Tomorrow calculate $(2/3) \div (4/9)$ and find 20% of 75.

F2

Before L013, simplify $12/18$ and explain what the fraction compares.

Read and prepare

Ratio $a:b$ compares the first quantity with the second in that order. To share £50 in the ratio 2:3, there are five equal parts. Each part is £10, so the shares are £20 and £30.

Digital workbook: save locally where available; export a JSON backup before closing or moving the file. Restore only this lesson/version. Printing records answers, not mastery. Live browser checks remain pending; use Word/PDF if required.

Optional extension activities

Stretch

Solve $\frac{3}{5}$ of $x=42$ and $0.2x=18$.

Deep challenge

Diagnose why 50% increase followed by 50% decrease does not restore the start.

Recall & Review: feedback and extension integration

Source-integrated WWW/EBI and extension page

Lesson L012: Number checkpoint and feedback

Objective: Demonstrate cumulative number understanding, diagnose the cause of an error and verify a repair independently.

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 chose an appropriate method and produced clear evidence against the lesson objective.

Even Better If (EBI)

I will show the missing working step, correct one misconception and test the method on a fresh question.

Integrated stretch and deep challenge

Stretch: Solve $\frac{3}{5}$ of $x=42$ and $0.2x=18$.

Deep challenge: Diagnose why 50% increase followed by 50% decrease does not restore the start.

My next-step response
