

Number diagnostic and repair

Pearson Edexcel GCSE Mathematics 1MA1 • L004

Foundation and Higher • Lesson resources

REACH FOR THE STAR | GCSE MATHEMATICS

Purpose

Diagnose a number error, repair the method, and choose an independent check that tests the original calculation.

Vocabulary

Diagnostic: evidence used to choose what to reteach. Inverse: an operation that undoes another.

Estimate: an approximate check of size. Counterexample: one case disproving an always claim.

Evidence: working that supports a conclusion.

Why the method works

A correct answer copied from feedback does not establish secure understanding. Use attempt → locate the first error → explain and repair → check independently → solve a fresh matched problem after a delay. Match the check to the risk: inverse for an operation, place value for scale, estimate for magnitude, and substitution into the original expression for a missing number.

Method and checking

Keep the original calculation visible. Repeating the same incorrect method is not an independent check. A useful repair names the decision that went wrong and succeeds on a fresh question with the support removed.

Common errors and next attempt

Use R1–R3 to select one priority: R1 signed operations → inverse frame; R2 order → annotate first operation; R3 scale → place-value chart. D1–D3 teach the repairs, then A1–A3 remove prompts. M1–M5 after a delay diagnose retention. Do not set entry tier from this short check. Wider screen findings lead to prerequisite support before the relevant later unit.