

Fraction reasoning

Pearson Edexcel GCSE Mathematics 1MA1 • L008

Foundation and Higher • Lesson resources

REACH FOR THE STAR | GCSE MATHEMATICS

Purpose

Select, explain and check fraction methods; diagnose misconceptions and transfer a repaired method to a fresh problem.

Vocabulary

Counterexample: one case that disproves an always claim. Inverse check: reverse an operation.

Unit fraction: numerator 1. Systematic list: organised list that avoids omissions and repeats.

Why the method works

A check must test the original meaning. If $1/2 + 1/3$ is given as $2/5$, the result is below $1/2$ although a positive amount was added. Renaming gives $3/6 + 2/6 = 5/6$. Subtracting $1/3$ from $5/6$ returns $1/2$.

Method and checking

Attempt without prompts, identify the first incorrect decision, explain the repair, then solve a fresh matched problem. Use common units for $+/ -$ and a reciprocal for $\div$. List possibilities systematically when the problem asks for combinations.

Common errors and next attempt

R1 errors: rebuild equivalent fractions before operations. R2 errors: compare common units. R3 errors: restore order of operations. Choose one repair rather than reteaching everything. Reassess $1/4 + 1/6 = 5/12$ and $(2/5) \div (1/5) = 2$ after a delay.