

Equivalent fractions

Pearson Edexcel GCSE Mathematics 1MA1 • L006

Foundation and Higher • Lesson resources

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Purpose

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

Vocabulary

Numerator: number of parts counted. Denominator: equal parts in one whole. Equivalent: same value. Improper fraction: numerator at least denominator. Mixed number: whole number plus proper fraction.

Why the method works

Splitting each of three equal parts into two makes six equal parts. Thus $\frac{2}{3} = \frac{4}{6}$. Multiplying numerator and denominator by the same non-zero number multiplies by 1, preserving the value. Adding the same number to both does not usually do this.

Method and checking

Simplify by a common factor, preferably the HCF. For a mixed number, multiply wholes by the denominator, then add the numerator. For comparison, use equal denominators and compare numerators; keep the same whole.

Common errors and next attempt

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 $1\frac{2}{5} = \frac{7}{5}$.