

Fractions decimals and percentages

Pearson Edexcel GCSE Mathematics 1MA1

Foundation and Higher • L009

Number and proportion • Review v0.9

The goal and the evidence

Connect & Check → Share → Present → Apply → Recall & Review

Convert between fractions, decimals and percentages.

Compare proportions using one consistent form.

Starting-point diagnostic

R1–R3 • Attempt without notes

Simplify $25/100$ and $75/100$.

0.07×100 ; $35 \div 100$

$(3/5) \div (3/10)$

Per hundred

$$3/5 = 60/100 = 0.6 = 60\%$$

Your turn: 7/20

Write a decimal and percentage.

Decimal to fraction

$$0.08 = 8/100 = 2/25 = 8\%$$

Your turn: 0.375

Use 375/1000, then simplify.

More than one whole

$$125\% = 125/100 = 5/4 = 1.25$$

Your turn: 150%

The reference whole represents 100%.

Part of a total

$$3 \text{ out of } 8 = 3/8 = 37.5\%$$

Your turn: 7 out of 10

Divide the part by its whole.

KEEP THE PROPORTION THE SAME

$$25\% = 25/100 = 1/4 = 0.25$$

Use one common form for comparison.

Diagnostic pause

Choose and explain before moving on.

0.35 as a percentage?

A 0.35% B 3.5% C 35%

Careful variation

A1 • Explain your decisions

Convert to percentages: 0.4, 0.04, 0.004 and 1.4.
Explain the place-value pattern.

Show your method and check the result.

Independent application

A2 • Without prompts

Write $\frac{3}{8}$ as a decimal and percentage. Write 65% as a simplified fraction. Order 0.62, $\frac{3}{5}$ and 61% from least to greatest.

Show your method and check the result.

Use the method in context

A3 • Explain your decisions

Team A scores 18 out of 24; team B scores 14 out of 20. Which has the greater success proportion?

Show your method and check the result.

Intentional practice feedback

Read after attempting A3

A: 75%, compared with B:70%.

Check the interpretation as well as the arithmetic.

A claim to test

C1 • Explain your decisions

Is $\frac{1}{3}$ exactly 33%? Explain without relying on a rounded calculator display.

Show your method and check the result.

Deepen the reasoning

C2 • Explain your decisions

Give three different forms of a proportion greater than 100%, and explain what it means relative to one whole.

Show your method and check the result.

Retrieval without notes

Q1–Q6 • Use full prompts in your workbook

Q1–Q3

$\frac{3}{4} \rightarrow$ decimal

$0.6 \rightarrow$ fraction

$\frac{7}{20} \rightarrow \%$

Q4–Q6

$125\% \rightarrow$ decimal

$0.08 \rightarrow \%$

$\frac{1}{2} + \frac{1}{4}$

Independent exit evidence

P1 • 2 marks • Without notes

Convert 0.45 to a simplified fraction and a percentage. [2]

Show working. Teacher review follows.

Independent exit evidence

P2 • 2 marks • Without notes

Compare $\frac{7}{10}$ and 68%. Show them in the same form. [2]

Show working. Teacher review follows.

Feedback and next steps

P3 • Completion is not mastery

Name one decision you can now explain.

Choose a fresh question and a delayed check.

Before the next lesson

L010: Fractions and percentages of amounts

Complete F1 tomorrow without notes.

Read and attempt F2; bring one question.

Recurring decimals to fractions

Higher alternative • Model • 3 minutes

$$x = 0.272727\dots; 100x = 27.272727\dots$$

$$99x = 27, \text{ so } x = 27/99 = 3/11$$

Align the repeating tails

Higher alternative • H1–H2 • 3 minutes

0.666...: multiply by 10, then subtract.

0.454545...: multiply by 100.

Independent Higher evidence

HX1 • 2 marks • 2 minutes

Convert $0.777\dots$ with 7 repeating forever.

Show the subtraction step and exact fraction.

Independent Higher evidence

HX2 • 2 marks • 2 minutes

Convert $0.363636\dots$ with 36 repeating.

Show the subtraction step and exact fraction.

Optional stretch

Convert $\frac{7}{20}$ into a decimal and percentage, then order it with 0.3 and 32%.

Show a method. Explain a check or counterexample.

Optional deep challenge

A learner claims $0.125 = 12.5/10$ percent. Correct the conversion.

Show a method. Explain a check or counterexample.

L009 Recall & Review



Fractions decimals and percentages

Fresh evidence: prove the objective

Solve a new question without prompts. Explain one check, then correct one error in your working.

Objective: Convert between fractions, decimals and percentages, and compare proportions on a consistent basis.

Write the next practice step before you leave. It must test the method again, not simply copy today's example.

Feedback language

Use the full phrases before the abbreviations.

What Went Well (WWW)

I selected a suitable representation or multiplier and kept the reference amount clear.

Point to the method, representation, reasoning or check that improved.

Even Better If (EBI)

I will state the whole/part, show each operation and check that the size of my answer is reasonable.

Set one precise next-step action and test it on a fresh question.

Extension route

Choose this route only after the core evidence is secure.

Stretch

Convert $\frac{7}{20}$ into a decimal and percentage, then order it with 0.3 and 32%.

Deep challenge

A learner claims $0.125 = 12.5/10$ percent. Correct the conversion.

Explain your reasoning clearly enough that another learner could check it.