

Collect expand and factorise

Pearson Edexcel GCSE Mathematics 1MA1

L018 • Foundation and Higher

60 minute lesson | learner resources

The goal and the evidence

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

Collect like terms, expand a single bracket and factorise a common factor. Explain how these equivalent forms are connected.

Explain, apply and check independently.

Starting-point diagnostic

R1–R3 • Attempt without notes

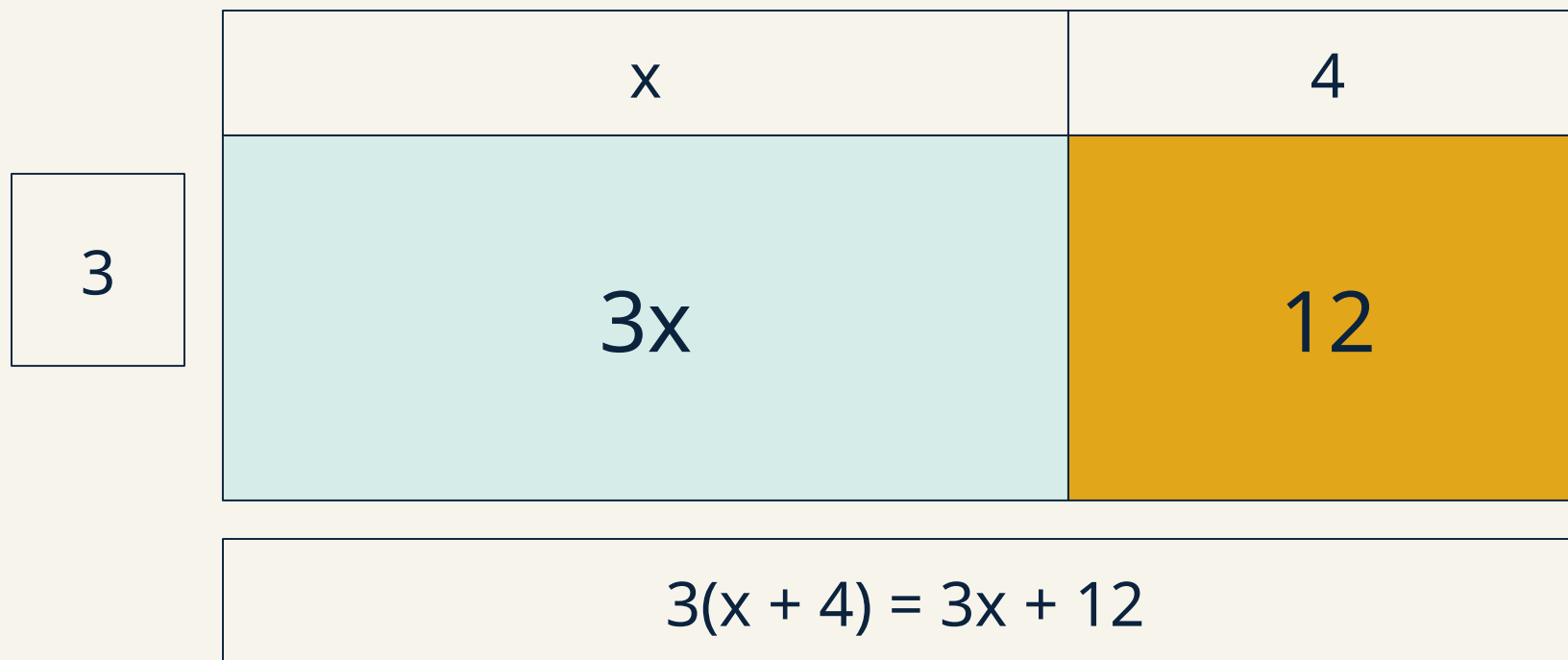
Evaluate $3x+2x$ when $x=4$.

Find HCF of 12 and 18.

Calculate $-2 \times (-3)$.

See the distributive law

Read the representation; explain the connection.



Worked example and your turn

D1 • Explain each step

Model: $3x+2x-x=4x$. Now simplify $5a-2a+4$.

Try the paired problem; check independently.

Worked example and your turn

D2 • Explain each step

Model: $3(x+2)=3x+6$. Complete $4(y-3)=4y+ \underline{\hspace{1cm}}$.

Try the paired problem; check independently.

Worked example and your turn

D3 • Explain each step

Model: $-2(x-3) = -2x+6$. Now expand $-3(a+2)$.

Try the paired problem; check independently.

Worked example and your turn

D4 • Explain each step

Model: $6x+9=3(2x+3)$. Now factorise $8a+12$ fully.

Try the paired problem; check independently.

A method you can explain

Name what changes at each step.

Check against the original question.

Diagnostic pause

Choose and explain before moving on.

Expand $3(x+4)$: A $3x+4$, B $3x+12$, C $7x$.

Use your explanation to decide the next step.

Careful variation

A1 • Show your reasoning

Simplify $3x+2x$; $3x+2y$; $3x^2+2x^2$; $3x^2+2x$. Explain which pairs combine.

Explain your decisions and check the result.

Independent application

A2 • Show your reasoning

Expand $5(x-2)$, then simplify $5(x-2)+3x+4$.

Explain your decisions and check the result.

Use the method in context

A3 • Show your reasoning

A rectangle has sides $x+2$ and 3 cm. Write its perimeter and simplify it.

Explain your decisions and check the result.

Intentional practice feedback

Read after attempting A3

$$2(x+2)+6=2x+10 \text{ cm.}$$

Correct one step and explain the change.

A claim to test

C1 • Show your reasoning

A learner factorises $6x+12$ as $6(x+12)$. Explain the error and repair it.

Explain your decisions and check the result.

Deepen the reasoning

C2 • Show your reasoning

Show that $3(x+4) - 2(x+1)$ is equivalent to $x+10$ for every x .

Explain your decisions and check the result.

Retrieval without notes

Q1–Q6 • Numeric answers; units as requested

Q1–Q3

Coefficient of x in $3x+5x$

Constant in $4(x+3)$

Constant in $-2(x-5)$

Q4–Q6

HCF of 12 and 18

Value of $2x+10$ at $x=3$

$3x+2$ for $x=-2$

Independent exit evidence

P1 • Without notes • Teacher review

Expand and simplify $2(x+5)+3x$. [2]

Show working and check your answer.

Independent exit evidence

P2 • Without notes • Teacher review

Factorise $12x+18$ fully and expand your answer to check. [2]

Show working and check your answer.

Feedback and next steps

P3 • Completion is not mastery

Explain one error you have corrected.

Set a fresh question and a delayed check.

Before the next lesson

L019: Linear equations

Complete F1 tomorrow without notes.

Attempt F2 and bring one question.

Optional stretch

Expand and simplify $3(2x-5)-2(x+4)$.

Show a method. Explain a check or counterexample.

Optional deep challenge

Factorise $6x^2+9x$ fully and check by expansion.

Show a method. Explain a check or counterexample.

L018 Recall & Review



Collect expand and factorise

Fresh evidence: prove the objective

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

Objective: Collect like terms, expand a single bracket and factorise a common factor. Explain how these equivalent forms are connected.

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 wrote the algebraic structure accurately and used a valid step-by-step method.

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

Even Better If (EBI)

I will show inverse operations clearly, keep signs/brackets accurate and substitute back to check.

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

Expand and simplify $3(2x-5)-2(x+4)$.

Deep challenge

Factorise $6x^2+9x$ fully and check by expansion.

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