

Perimeter and compound area

Pearson Edexcel GCSE Mathematics 1MA1

L033 • Geometry and measures

60 minute lesson | learner resources

The goal and the evidence

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

Calculate perimeters and areas of compound rectilinear shapes, triangles, parallelograms and trapezia with correct units.

Explain, apply and check independently.

Starting-point diagnostic

R1–R3 • Attempt without notes

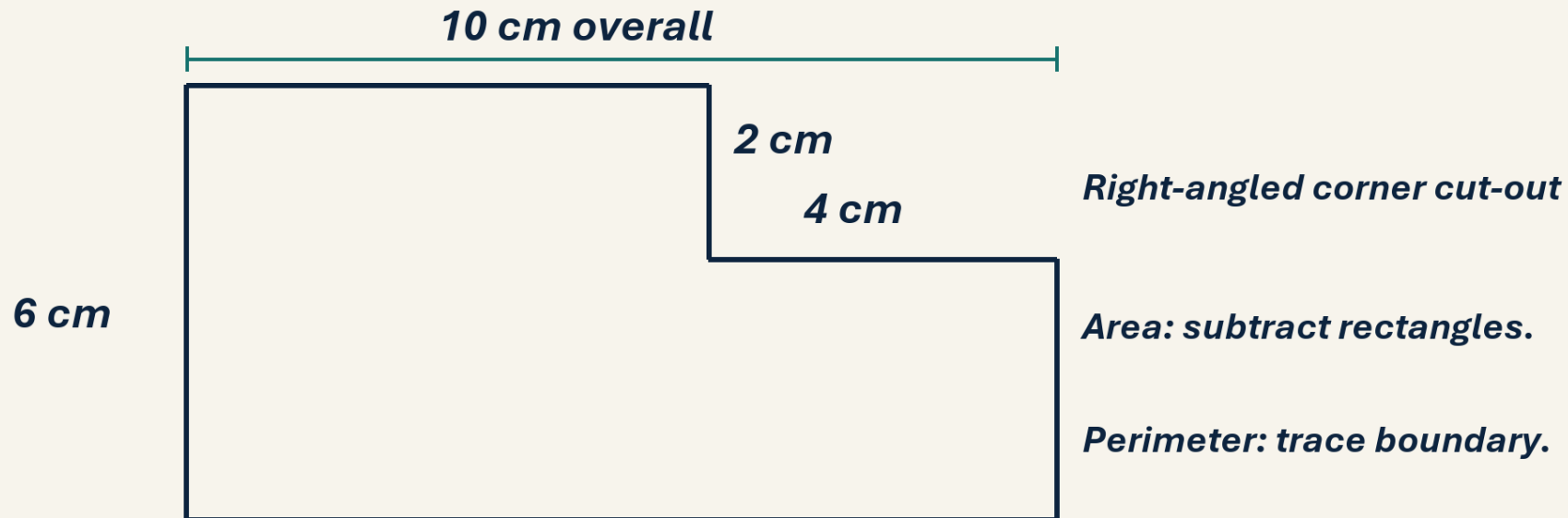
Find perimeter of a 6 cm by 4 cm rectangle.

Find its area.

Convert 1 cm² to mm².

See the geometry

Use the diagram and practical sheet.



Teaching sketch • not to scale

Worked example and your turn

D1 • Explain each step

Model: rectangle 8×5 cm with a 3×2 cm corner removed has area $40 - 6 = 34$ cm². Now 10×6 cm minus a 4×2 cm corner.

Try the paired problem; check independently.

Worked example and your turn

D2 • Explain each step

Model: triangle base 8 cm, height 3 cm has area 12 cm². Now base 10 cm, perpendicular height 7 cm.

Try the paired problem; check independently.

Worked example and your turn

D3 • Explain each step

Model: parallelogram base 6 cm, height 4 cm has area 24 cm^2 . Now base 9 cm, height 5 cm.

Try the paired problem; check independently.

Worked example and your turn

D4 • Explain each step

Model: trapezium parallel sides 4,8 cm and height 3 cm has area 18 cm^2 . Now sides 5,9 cm, height 4 cm.

Try the paired problem; check independently.

A method you can explain

Name the fact or construction at each step.

Check against the original question.

Diagnostic pause

Choose and explain before moving on.

A triangle has base 8 cm, perpendicular height 3 cm, sloping side 5 cm. Area? A 12, B 20, C 24 cm^2 .

Use your explanation to decide the next step.

Careful variation

A1 • Show your reasoning

With base 8 cm and height 5 cm, compare rectangle/parallelogram area with triangle area.

Explain your decisions and check the result.

Independent application

A2 • Show your reasoning

For a 10×6 cm rectangle with a 4×2 cm corner removed, find area and perimeter.

Explain your decisions and check the result.

Use the method in context

A3 • Show your reasoning

A floor is an 8 m by 5 m rectangle with a 3 m by 2 m corner missing. Tiles cover 0.5 m^2 each. Find tiles needed, ignoring waste.

Explain your decisions and check the result.

Intentional practice feedback

Read after attempting A3

34 m²; 68 tiles.

Correct one step and explain the change.

A claim to test

C1 • Show your reasoning

A square and rectangle have the same perimeter.
Must their areas match? Give a counterexample.

Explain your decisions and check the result.

Deepen the reasoning

C2 • Show your reasoning

Removing a rectangular corner always reduces perimeter. Test a 10×6 rectangle with a 4×2 corner removed.

Explain your decisions and check the result.

Retrieval without notes

Q1–Q3 • Numeric answers

Area 6×4 rectangle, in cm^2

Perimeter 6×4 rectangle, in cm

Triangle $b=10, h=7$: area in cm^2

Retrieval without notes

Q4–Q6 • Numeric answers

Trapezium $a=5, b=9, h=4$: area in cm^2

Area 10×6 minus 4×2 , in cm^2

mm^2 in 1 cm^2

Independent exit evidence

P1 • Without notes • Teacher review

Find the area of a trapezium with parallel sides 6, 10 cm and height 5 cm. Show working. [2]

Show working and check your answer.

Independent exit evidence

P2 • Without notes • Teacher review

A 9×6 cm rectangle has a 2×3 cm corner removed.
Find its area and perimeter. [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

L034: Circles arcs and sectors

Complete F1 tomorrow without notes.

Attempt F2 and bring one question.

Optional stretch

A rectangle 12 cm by 8 cm has a 3 cm by 2 cm corner cut out. Find area and perimeter.

Show a method. Explain a check or counterexample.

Optional deep challenge

Two shapes each have area 36 cm^2 . Must their perimeters be equal? Give a counterexample.

Show a method. Explain a check or counterexample.

L033 Recall & Review

Perimeter and compound area



Fresh evidence: prove the objective

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

Objective: Calculate perimeters and areas of compound rectilinear shapes, triangles, parallelograms and trapezia with correct units.

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 the correct geometric fact, theorem, formula or transformation and used a clear diagram with appropriate labels and units.

Identify the mathematical method, representation, reasoning or check that improved.

Even Better If (EBI)

I will name the fact or theorem, show the substitution or construction step and check whether the size, direction and units of the result are 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

A rectangle 12 cm by 8 cm has a 3 cm by 2 cm corner cut out. Find area and perimeter.

Deep challenge

Two shapes each have area 36 cm^2 . Must their perimeters be equal? Give a counterexample.

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