

Slide by slide delivery map

Pearson Edexcel GCSE Mathematics 1MA1 • L033

22 slides • 60 minutes • Teacher use only • Lesson resources

REACH FOR THE STAR | GCSE MATHEMATICS

01 Perimeter and compound area 1 min Recall

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

02 The goal and the evidence 1 min Recall

Rectangle area; multiplication and fractions; L014 unit conversions; perpendicular height.

03 Starting-point diagnostic 5 min Recall

If sloping side is used as height, mark a right angle to the base. If internal cuts enter perimeter, trace with a finger. If cm^2 converts like cm, draw a 1 cm square as 10×10 mm. Recheck 8×5 rectangle minus 3×2 corner.

04 See the geometry 2 min Discover

A rectangle contains length $\times$ width unit squares. A triangle is half a parallelogram, so $\text{area} = \text{base} \times \text{perpendicular height} \div 2$. Shearing a parallelogram preserves area. Two matching trapezia make a parallelogram, giving $\text{area} = (a+b)h \div 2$ for parallel sides a,b. Split compound shapes without overlap; internal cut lines do not count in the perimeter.

05 Worked example and your turn 3 min Discover

52 cm^2 . $60 - 8$.

Delivery continued

06 Worked example and your turn 3 min Discover

35 cm^2 . $10 \times 7 \div 2$.

07 Worked example and your turn 3 min Discover

45 cm^2 . 9×5 .

08 Worked example and your turn 3 min Discover

28 cm^2 . $(5+9) \times 4 \div 2$.

09 A method you can explain 2 min Discover

Label missing lengths. Trace the outer boundary for perimeter. For area, choose non-overlapping pieces or subtract a cut-out. State square units. Estimate and use a second partition to check.

10 Diagnostic pause 3 min Apply

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

Answer A: half of 8×3 .

Delivery continued

11 Careful variation 4 min Apply

40 cm^2 and 20 cm^2 . Triangle is half for equal base and height.

12 Independent application 4 min Apply

52 cm^2 ; 32 cm. Removed boundary lengths are replaced by equal inset lengths; trace all six sides.

13 Use the method in context 4 min Apply

34 m^2 ; 68 tiles. Divide area by coverage per tile.

14 Intentional practice feedback 2 min Apply

Divide area by coverage per tile. Optional check: $(5+9)\times 4\div 2=28$. Enter brackets round the sum.

Estimate first; a triangle with the same base and height has half the parallelogram area.

15 A claim to test 4 min Challenge

4×4 gives perimeter 16 area 16; 6×2 gives perimeter 16 area 12. Same boundary length does not fix area.

Delivery continued

16 Deepen the reasoning 4 min Challenge

False: perimeter stays 32 cm; removed $4+2$ is replaced by inset $4+2$. This refers to a corner cut, not any hole or notch.

17 Retrieval without notes 2 min Prove

Answers: 24, 20, 35. Completion is not mastery.

18 Retrieval without notes 2 min Prove

Answers: 28, 52, 100. Completion is not mastery.

19 Independent exit evidence 2 min Prove

$(6+10) \times 5 \div 2$ M1; 40 cm^2 A1. Use square units.

20 Independent exit evidence 3 min Prove

48 cm^2 B1; 30 cm B1. Corner cut keeps perimeter here.

Delivery continued

21 Feedback and next steps 2 min Prove

If sloping side is used as height, mark a right angle to the base. If internal cuts enter perimeter, trace with a finger. If cm^2 converts like cm, draw a 1 cm square as 10×10 mm. Recheck 8×5 rectangle minus 3×2 corner.

22 Before the next lesson 1 min Recall

A circle circumference is $2\pi r$ and area is πr^2 . An arc or sector represents a fraction of the whole circle determined by its central angle divided by 360° .

Recall & Review: feedback and extension integration

Lesson L033: Perimeter and compound area

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

Timing for a 60-minute lesson

0-7 Connect & Check; 7-14 Share; 14-25 Present/model; 25-44 Apply route choice/practice; 44-52 independent exam-style check; 52-60 Recall & Review, WWW/EBI and next step.

Recall & Review evidence

At the end of the lesson, solve a fresh question without prompts, explain one check, correct one error and record the next practice step.

What Went Well (WWW)

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

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.

Integrated stretch and deep challenge

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.

Teacher use

Use the What Went Well (WWW) and Even Better If (EBI) prompts to write mathematics-specific feedback linked to the objective. Do not accept generic praise: identify the method, representation, reasoning or checking step that improved, then set a fresh next-step question.

Assessment evidence to inspect: Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. Optional check: $(5+9) \times 4 \div 2 = 28$. Enter brackets round the sum. Estimate first; a triangle with the same base and height has half the parallelogram area..