

Teacher guide and workbook answers

Pearson Edexcel GCSE Mathematics 1MA1 • L032

60 minutes • Foundation and Higher • Teacher use only • Lesson resources

REACH FOR THE STAR | GCSE MATHEMATICS

Purpose and prerequisites

Use independent geometry evidence to identify misconceptions, complete a targeted repair and demonstrate transfer.

L025–L031 geometry sequence; earlier number and equation methods.

Selected specification content: G2 G3 G5 G7 G15 R2. These lessons revisit shared content; they do not complete every aspect of those statements.

Preparation and support

Prepare mini-whiteboards, printed fallbacks and a teacher calculator. Prepare rulers, compasses, protractors, tracing paper and the practical drawing sheets. Drawings and constructions require teacher review. Confirm save/export/restore in the intended environment; browser QA remains pending. Distribute only the learner package.

Access: pre-teach vocabulary and read symbols aloud. Scaffold: model the first decision, offer a worked-example or inverse-check frame. Core: remove prompts for A2 and P1–P2. Stretch: C1–C2 deepen reasoning for either tier. Record the support used, not a fixed ability label.

Evidence and pacing

The delivery map totals 60 minutes. Use the recall and hinge to select a repair; the suggested one-third error trigger is a planning judgement, not a validated threshold. If errors are widespread, use two minutes from independent practice and defer C2. P1–P2 need teacher marking. The mini-test and exam practice are delayed/additional activities, not extra tasks squeezed into the hour.

A learner finds 60° but writes angles around a point total 180° . Is the reasoning secure? A yes, B no. Answer B: the claimed fact is false despite the number.

Recall and guided-practice answers

R1

62° . Sum 180° .

R2

$(-1, 1)$. Both three units from mirror.

R3

3 km. $300000 \text{ cm} = 3 \text{ km}$.

D1

73° . $180 - 107$.

D2

$(-2, -1)$. Both four units from $x=2$.

D3

105° . Subtract 180.

D4

13.5 km. Multiply by three.

Application and challenge answers

A1

$70^\circ, 120^\circ, 108^\circ$. Triangle sum; regular-polygon angle; parallel co-interior sum.

A2

(5,3); (6,4) uses the origin as centre. Displacement (2,1) doubles, then add centre.

A3

3 km; 245° . $300000 \text{ cm} = 3 \text{ km}$; add 180.

C1

A fresh independent task after a delay with explanation and recorded support. Immediate recall may be memory of answers.

C2

No; enlarging one preserves angles but changes lengths. AAA is insufficient for congruence.

Calculator guidance: Use a non-calculator first attempt. In the practical repair, a calculator may check unit conversions; assess geometric reasoning and drawing separately.

Independent evidence and next steps

P1

12 sides B1; 150° B1. $360 \div 30$ and $180 - 30$.

P2

Displacement (1,3) doubles to (2,6) M1; (3,7) A1. Add the centre back.

P3

Individual reflection. Record support and delayed evidence; completion is not mastery.

F1

335° ; $(-2,3)$. Use original conditions.

F2

20 cm; 24 cm^2 . Boundary versus covered surface.

Retrieval answers: 62, 120, 105, 3, -1, 70. Exact signed decimals/fractions/mixed numbers are accepted; unsupported notation goes to review. No automatic method marks. For rounding, equivalent numerical values may pass retrieval; the teacher checks stated accuracy and required trailing zeros in written work.

Reteaching and release

Wrong angle: name the rays and parallel markings. Wrong image: mark centre or mirror first.

Wrong scale: write both units. Wrong locus: distinguish exactly from within. Reassess one day and one week later.

Practice feedback is intentionally visible. Full assessment answers, this guide and delivery notes are teacher-only. Local saving is browser dependent; no account service is included. Completed resources enter Review; human approval and outstanding browser checks remain required.

Optional extension activities

Allow 10–15 minutes for learners who have secured the main practice. Show a method, explain a check and justify your conclusion.

Stretch

A regular hexagon has side 6 cm. Find perimeter and each exterior angle.

Answer and reasoning: Perimeter=36 cm; exterior angle=60°.

Deep challenge

A shape is enlarged by factor 3 and its original perimeter is 18 cm. A learner says new area is three times. Correct the reasoning.

Answer and reasoning: Perimeter becomes 54 cm; area factor is $3^2=9$, not 3.

Ask for a fresh independent explanation before deciding that the method is secure.

Activate Learning lesson cycle

Connect & Check: state the objective and diagnose prior knowledge. Share: pairs predict and compare methods. Present: explain or uncover the model. Apply: fade support for independent practice and optional stretch. Recall & Review: use a fresh question and feedback to decide the next step.

Recall & Review: feedback and extension integration

Lesson L032: Geometry checkpoint and feedback

Objective: Use independent geometry evidence to identify misconceptions, complete a targeted repair and demonstrate transfer.

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 used my working and assessment evidence to identify the exact mathematical step that was secure and the specific misconception that needs attention.

Even Better If (EBI)

I will correct one precise step, explain why the correction works and complete a fresh delayed question without the original scaffold.

Integrated stretch and deep challenge

Stretch: A regular hexagon has side 6 cm. Find perimeter and each exterior angle.

Deep challenge: A shape is enlarged by factor 3 and its original perimeter is 18 cm. A learner says new area is three times. Correct the reasoning.

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: Compare corrected responses with the original diagnostic and a fresh unprompted question. Record the misconception repaired and a delayed check. Use a non-calculator first attempt. In the practical repair, a calculator may check unit conversions; assess geometric reasoning and drawing separately..