

Slide by slide delivery map

Pearson Edexcel GCSE Mathematics 1MA1 • L025

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

REACH FOR THE STAR | GCSE MATHEMATICS

01 Angle facts and parallel lines 1 min Recall

Calculate missing angles and justify each step using named angle facts and marked parallel lines.

02 The goal and the evidence 1 min Recall

L019 linear equations; degrees, turns and straight lines; L024 angle preparation.

03 Starting-point diagnostic 5 min Recall

If every angle is copied, contrast an alternate pair with a co-interior pair. If parallelism is assumed, remove the arrows and ask what remains known. Recheck a 68° angle with its supplement, 112° .

04 See the geometry 2 min Discover

A straight angle is half a turn, 180° ; a full turn is 360° . At intersecting lines, opposite angles are equal because each supplements the same adjacent angle. With parallel lines, corresponding and alternate angles are equal; co-interior angles sum to 180° . A diagram that merely looks parallel is insufficient.

05 Worked example and your turn 3 min Discover

$y=107^\circ$. $180-73$.

Delivery continued

06 Worked example and your turn 3 min Discover

$y=155^\circ$. $360-80-125$.

07 Worked example and your turn 3 min Discover

117° ; 63° . Opposite equal; adjacent sum 180° .

08 Worked example and your turn 3 min Discover

$x=20$. $3x+10=70$.

09 A method you can explain 2 min Discover

Mark known angles and parallel arrows. Identify a relationship before calculating. Write an equality or sum, solve, then check the angle type. Use the diagram sheet to trace the relevant rays.

10 Diagnostic pause 3 min Apply

A co-interior pair on parallel lines includes 65° . Other angle? A 65° , B 115° , C 295° . Answer B: the pair sums to 180° .

Delivery continued

11 Careful variation 4 min Apply

48° , 48° , 132° . Only the co-interior partner is supplementary.

12 Independent application 4 min Apply

$x=50$; 120° and 60° . $3x+30=180$; check sum.

13 Use the method in context 4 min Apply

116° . Adjacent angles sum 180° ; corresponding angles transfer between crossings.

14 Intentional practice feedback 2 min Apply

Adjacent angles sum 180° ; corresponding angles transfer between crossings. Non-calculator reasoning. Optional check: $95+85=180$. A calculator cannot identify an angle relationship.

15 A claim to test 4 min Challenge

Appearance is not evidence of parallelism. Equality requires parallel lines or another given reason. Use markings or stated information.

Delivery continued

16 Deepen the reasoning 4 min Challenge

Both equal $180 - a$, so they are equal. This is a general argument, not a measurement.

17 Retrieval without notes 2 min Prove

Answers: 108, 265, 113. Completion is not mastery.

18 Retrieval without notes 2 min Prove

Answers: 47, 56, 55. Completion is not mastery.

19 Independent exit evidence 2 min Prove

94° B1; angles on a straight line sum to 180° B1. Check $86 + 94 = 180$.

20 Independent exit evidence 3 min Prove

$4x - 5 = 63$ M1; $x = 17$ A1. The angles are equal.

Delivery continued

21 Feedback and next steps 2 min Prove

If every angle is copied, contrast an alternate pair with a co-interior pair. If parallelism is assumed, remove the arrows and ask what remains known. Recheck a 68° angle with its supplement, 112° .

22 Before the next lesson 1 min Recall

A line through a triangle vertex parallel to the opposite side lets alternate angles transfer onto a straight line. This explains the triangle angle sum of 180° .

Recall & Review: feedback and extension integration

Lesson L025: Angle facts and parallel lines

Objective: Calculate missing angles and justify each step using named angle facts and marked parallel lines.

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: Two parallel lines have co-interior angles $3x+10$ and $2x+20$. Find x .

Deep challenge: A student says alternate angles always add to 180° . Correct the claim.

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. Non-calculator reasoning.

Optional check: $95+85=180$. A calculator cannot identify an angle relationship..