

Slide by slide delivery map

Pearson Edexcel GCSE Mathematics 1MA1 • L020

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

REACH FOR THE STAR | GCSE MATHEMATICS

01 Equations in contexts 1 min Recall

Translate a context into a linear equation, solve it and interpret the result with appropriate units and constraints.

02 The goal and the evidence 1 min Recall

L018 expressions; L019 solving and checking linear equations; perimeter as a sum of lengths.

03 Starting-point diagnostic 5 min Recall

If a fixed fee is multiplied by the number of items, compare one item with two. If perimeter is confused with area, trace all sides. Recheck $3n+2=17$ as five items, not £5.

04 Worked example and your turn 3 min Discover

$n=6$ tickets. $5n+2=32$.

05 Worked example and your turn 3 min Discover

11 and 12. $2n+1=23$; $n=11$.

Delivery continued

06 Worked example and your turn 3 min Discover

7 cm and 10 cm. $4x+6=34$; $x=7$.

07 Worked example and your turn 3 min Discover

$n=4$; both cost £16. $8+2n=4n$.

08 A method you can explain 2 min Discover

Define the unknown with units. Translate each relationship, keeping one-off charges separate. Solve using balanced operations. Substitute and check the result against the context.

09 Diagnostic pause 3 min Apply

n tickets cost £4 each plus one £3 fee. Total £23: A $4(n+3)=23$, B $4n+3=23$, C $7n=23$. Answer B.

10 Careful variation 4 min Apply

$x+6=20$, $x=14$; $6x=30$, $x=5$; $2x-6=20$, $x=13$. Word order and operation matter.

Delivery continued

11 Independent application 6 min Apply

Width 8 cm; length 13 cm. $2x+2(x+5)=42$.

12 Use the method in context 4 min Apply

7 visits; $6+3\times 7=27$. The fee is paid once.

13 Intentional practice feedback 2 min Apply

The fee is paid once. Optional check after C2: enter $10+2\times 8$ and 4×8 . Expect 26 and 32. Check that the calculator expression matches the written cost model.

14 A claim to test 4 min Challenge

No. $2n+1=30$ gives $n=14.5$, not a whole number. Consecutive integer sums are odd.

15 Deepen the reasoning 4 min Challenge

Equal at 5 visits (£20). At 8, A £26 and B £32, so A. Equality alone does not decide every case.

Delivery continued

16 Retrieval without notes 4 min Prove

Answers: 5, 11, 7, 4, 7, 9. Completion is not mastery.

17 Independent exit evidence 2 min Prove

$2n+4=18$ B1; $n=7$ items B1. Accept equivalent equations.

18 Independent exit evidence 3 min Prove

$n+(n+1)=35$ M1; 17 and 18 A1 both. Check total and consecutiveness.

19 Feedback and next steps 2 min Prove

If a fixed fee is multiplied by the number of items, compare one item with two. If perimeter is confused with area, trace all sides. Recheck $3n+2=17$ as five items, not £5.

20 Before the next lesson 1 min Recall

A formula links quantities. The subject is the letter isolated on one side. To make n the subject of $C=3n+4$, subtract 4 from both sides then divide by 3: $n=(C-4)/3$.

Recall & Review: feedback and extension integration

Lesson L020: Equations in contexts

Objective: Translate a context into a linear equation, solve it and interpret the result with appropriate units and constraints.

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 represented the algebraic structure accurately, kept each transformation valid and checked the result by substitution, graph or equivalent reasoning.

Even Better If (EBI)

I will show the missing inverse operation or algebraic step, keep signs and brackets accurate and test the result in the original relationship.

Integrated stretch and deep challenge

Stretch: A taxi charges £3.50 plus £1.80 per mile. Find miles travelled for a £21.50 fare.

Deep challenge: A rectangle's perimeter is 38 cm and its length is 3 cm more than width. Find dimensions.

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 core; optional calculator check.