

Slide by slide delivery map

Pearson Edexcel GCSE Mathematics 1MA1 • L002

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

REACH FOR THE STAR | GCSE MATHEMATICS

01 MULTIPLICATION AND ORDER 1 min Recall

Calculate with signed products, quotients and mixed operations; justify the order and check with an inverse.

02 The goal and the evidence 1 min Recall

L001 signed addition/subtraction; whole-number multiplication facts and division; simple squares.

03 Starting-point diagnostic 4 min Recall

Negative product error: rebuild three groups of -4 , then use distribution over a zero pair.

Quotient error: write divisor $\times$ missing number = dividend. Order error: underline the next operation, write one transformation per line. Reassess with $-4 \times (-3) = 12$, $-35 \div 7 = -5$ and $12 - 2 \times 4 = 4$.

04 Signed multiplication 6 min Discover

-12 . Four groups of -3 have a total of -12 .

05 Why two negative factors give a positive 3 min Discover

12 ; 0 ; 10 . Distribution over $4 + (-4) = 0$ explains the sign.

Delivery continued

06 Division reverses multiplication 4 min Discover

4; $(-6) \times 4 = -24$. The divisor times the quotient must equal the dividend.

07 Operation priority 3 min Discover

-6 ; 1. Multiply before adding.

08 SAME PRIORITY: LEFT TO RIGHT 3 min Discover

Brackets first; then powers; then multiplication and division from left to right; then addition and subtraction from left to right. Equal-priority operations are not separate alphabetical steps.

09 Diagnostic pause 3 min Apply

For $18 \div 3 \times 2$, A 3, B 12, C 6. B is correct: $18 \div 3 = 6$, then $\times 2$. A wrongly groups 3×2 . C stops early. Recheck with $20 \div 5 \times 2 = 8$.

10 Careful variation 4 min Apply

12, -12 , -12 , 12. Changing one factor's sign changes the product's sign; changing both restores it.

Delivery continued

11 Independent application 4 min Apply

12; 3; 15. Use left-to-right order at equal priority; brackets change grouping.

12 Use the method in context 3 min Apply

$-7 + 3 \times 4 - 9 = -4$, so $-\text{£}4$. Payments are positive changes. Check $-4 + 9 - 12 = -7$.

13 Intentional practice feedback 3 min Apply

Optional check only: estimate the sign, then enter $(-18) \div (-3) + 2 \times 4$ using brackets and the negative-number key. Expect 14. Calculator models differ; demonstrate your own.

14 A claim to test 3 min Challenge

-5 and 6 . The claim works for a product of two negative numbers, not every operation. State the operation before using a sign rule.

15 Deepen the reasoning 3 min Challenge

9 and -9 . $(-3)^2 = (-3) \times (-3)$; -3^2 means $-(3 \times 3)$. A power acts on its base; brackets show that the negative sign belongs to the base.

Delivery continued

16 Retrieval without notes 4 min Prove

Answers: -20, 18, -4, 8, 11, 14. Score is retrieval evidence, not mastery.

17 Independent exit evidence 5 min Prove

-6. M1 for $3 \times (-4) = -12$; A1 for $6 - 12 = -6$. 7 B1; $(-6) \times 7 = -42$ B1.

18 Feedback and next steps 2 min Prove

Negative product error: rebuild three groups of -4, then use distribution over a zero pair.

Quotient error: write divisor $\times$ missing number = dividend. Order error: underline the next operation, write one transformation per line. Reassess with $-4 \times (-3) = 12$, $-35 \div 7 = -5$ and $12 - 2 \times 4 = 4$.

19 Before the next lesson 1 min Recall

Each place to the left is ten times the value. For example, $2.47 \times 10 = 24.7$: the digits take places worth ten times as much. Estimate an answer before using a calculator.

Recall & Review: feedback and extension integration

Lesson L002: Multiplication, division and order

Objective: Calculate with signed products, quotients and mixed operations; justify the order and check with an inverse.

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 an efficient numerical method, showed the key steps clearly and checked the sign, size or accuracy of my answer.

Even Better If (EBI)

I will make the place-value, sign or operation decision explicit and use estimation or an inverse calculation to check a fresh question.

Integrated stretch and deep challenge

Stretch: Calculate $48 \div (-6) \times (-2) + 5$, showing equal-priority operations left to right.

Deep challenge: Insert brackets in $6 + 2 \times 5 - 4$ to make 36 and explain your choice.

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.