

Slide by slide delivery map

Pearson Edexcel GCSE Mathematics 1MA1 • L001

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

REACH FOR THE STAR | GCSE MATHEMATICS

01 SIGNED NUMBERS 1 min Recall

Welcome errors as useful evidence. Goal: add/subtract signed numbers and justify/check a result. No calculator until the check demonstration.

02 What this lesson prepares you to do 1 min Recall

Ask learners to say what a check should establish. Both tiers share this goal.

03 Starting-point diagnostic 4 min Recall

Answers R1 $-5, -1, 0, 2$; R2 5 and $5+3=8$; R3 -2 . If ordering insecure, use physical number line and verbal rehearsal.

04 A sign and an operation 2 min Discover

Distinguish unary sign and binary subtraction. Read $-3-(-5)$ aloud. Brackets group a signed number.

05 The number line 3 min Discover

Draw an equally spaced editable line on the next slide; establish direction and scale.

06 Adding a positive number 2 min Discover

Model start -3 ; five right to 2. Explain crossing zero. Read the line labels and movement aloud.

Delivery continued

07 Your turn, then less support 3 min Discover

D1 2; D2 $-3, 5$, left. Remove line prompts once secure. If -6 given for D1, check start/direction.

08 Adding a negative number 2 min Discover

Five left is equivalent to subtracting five. Do not generalise a rule about two signs without attending to the operation.

09 Subtracting a positive number 3 min Discover

D3 -8 , check $-8+5=-3$. Subtraction adds the opposite. Use line then remove it.

10 SUBTRACTION ADDS THE OPPOSITE 2 min Discover

Explain $-b$ is the opposite of b . For b negative, $-b$ positive. Use inverse relationship rather than slogan “two minuses make a plus”.

11 Subtracting a negative number 3 min Discover

D4 5 and 2. Explain why the inverse check must add the signed number subtracted.

12 Diagnostic pause 2 min Apply

B. A confuses subtraction with addition of -2 ; C ignores starting sign. Reteach using $x+(-2)=-5$; recheck $-6-(-4)=-2$. If widespread, use 2 minutes from A2.

Delivery continued

13 Careful variation 5 min Apply

Answers 11, -3 , -3 , 11. Ask learners to explain paired equality. Optional line; no fixed ability grouping.

14 Independent calculation 4 min Apply

Answers 3, -15 , 3. Require one inverse check. Compare strategy with partner after independent attempt.

15 Changes in temperature 3 min Apply

$-4 + 9 - 3 = 2^{\circ}\text{C}$; inverse $2 + 3 - 9 = -4$. State each change, not just final answer. Learners may use line or calculation.

16 Practice feedback and calculator check 2 min Apply

Different models label unary minus differently: $(-)$, $+/-$ or neg. Teacher demonstrates own model with brackets; expect 2. Arithmetic check is optional, not a substitute for explanation.

17 A claim to test 4 min Challenge

Any $a - b$ with $b < 0$. Example $1 - (-2) = 3 > 1$. Accept valid counterexamples and explanations, not only model.

Delivery continued

18 Stretch the reasoning 2 min Challenge

Exactly $b < 0$. Require general argument. Optional extension for either tier; do not label it Higher content.

19 Retrieval without notes 4 min Prove

$-3, -5, -10, 2, 7, 1.5$. Digital accepts signed decimal/fraction equivalents. Unsupported notation goes to review, not wrong. Score out of 6 is retrieval evidence only.

20 Independent exit evidence 5 min Prove

P1 -4 and $-4 + (-3) = -7$, 1 each. P2 $-2 - 3 + 8 = 3$, method1 answer1. No automatic method mark. Do not show solutions in learner slides.

21 Feedback and next steps 2 min Prove

If operation/sign confusion persists, reteach with inverse checks in L002 opening. Confidence is not evidence of independent success.

22 Before Lesson 2 1 min Recall

F1 3,8. F2 12,4,14. Retrieve signed addition/subtraction again in one week. Teacher uses mini-test as delayed diagnostic, exam practice as follow-up.

Recall & Review: feedback and extension integration

Lesson L001: Signed numbers

Objective: Order integers; signed addition/subtraction; explain and check.

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 $-18+27-35$ and check by grouping in a second way.

Deep challenge: A learner claims subtracting a negative always gives a positive answer. Test the claim with 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. NC core; optional C check.