

Slide by slide delivery map

Pearson Edexcel GCSE Mathematics 1MA1 • L022

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

REACH FOR THE STAR | GCSE MATHEMATICS

01 Inequalities and number lines 1 min Recall

Solve linear inequalities and represent solution sets on number lines. Explain endpoint inclusion and order reversal.

02 The goal and the evidence 1 min Recall

L019 balanced equation methods; signed-number ordering and L021 inverse operations.

03 Starting-point diagnostic 5 min Recall

If only the boundary is reported, ask for two solutions. If $\leq$ is drawn open, test the endpoint. If negative division is missed, compare -2 and -5 . Recheck $-2x < 6$ as $x > -3$.

04 See the endpoint and direction 2 min Discover

Top: $x < 3$ excludes 3, open endpoint, all values left. Bottom: $x \geq -1$ includes -1 , filled endpoint, all values right. Equal tick spacing represents unit steps. Test the endpoint and one value either side.

05 Worked example and your turn 3 min Discover

Filled circle at -1 ; ray to the right. -1 is included, and all greater values.

Delivery continued

06 Worked example and your turn 3 min Discover

$x \geq 5$. Add 3 on both sides.

07 Worked example and your turn 3 min Discover

$x > 4$. Add 2, divide by positive 3.

08 Worked example and your turn 3 min Discover

$x \leq -4$. Division by -3 reverses the sign.

09 A method you can explain 2 min Discover

Solve using balanced operations. Reverse the inequality when multiplying or dividing by a negative number. Mark the endpoint and direction, then test one value inside and one outside the set.

10 Diagnostic pause 3 min Apply

For $x \leq 3$, is 3 included? A yes, B no. Answer A: equality is allowed, so draw a filled circle.

Delivery continued

11 Careful variation 4 min Apply

Open left; filled left; open right; filled right. Strictness and direction are separate choices.

12 Independent application 4 min Apply

$x \leq 4$; 1,2,3,4. The integer condition narrows the real solution set.

13 Use the method in context 4 min Apply

$5 + 3v \leq 20$; $v \leq 5$; maximum 5 visits. At most includes equality.

14 Intentional practice feedback 2 min Apply

At most includes equality. Optional numerical check for $-3x \geq 12$: $x = -5$ gives $15 \geq 12$, while $x = 0$ gives $0 \geq 12$ false. A calculator tests selected values; it does not describe the full set.

15 A claim to test 4 min Challenge

$x = 0$ fits the original but not the claim. Correct $x \geq -4$. Division by a negative reverses order.

Delivery continued

16 Deepen the reasoning 4 min Challenge

$-1, 0, 1, 2, 3$. -2 is excluded; 3 is included.

17 Retrieval without notes 4 min Prove

Answers: $5, 4, -4, 3, 5, 5$. Completion is not mastery.

18 Independent exit evidence 2 min Prove

$x < 4$ B1; open circle at 4 and ray left B1. Both endpoint and direction required.

19 Independent exit evidence 3 min Prove

$x \geq -3$ B1; division by negative reverses order B1. Check a value such as 0 .

20 Feedback and next steps 2 min Prove

If only the boundary is reported, ask for two solutions. If $\leq$ is drawn open, test the endpoint. If negative division is missed, compare -2 and -5 . Recheck $-2x < 6$ as $x > -3$.

Delivery continued

21 Before the next lesson 1 min Recall

An arithmetic sequence has a constant difference. For 5,8,11,14,... the n th term is $3n+2$ when the first term is $n=1$. Check both the first term and the difference.

Recall & Review: feedback and extension integration

Lesson L022: Inequalities and number lines

Objective: Solve linear inequalities and represent solution sets on number lines. Explain endpoint inclusion and order reversal.

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: Solve $3 - 2x < 11$ and show the solution in words.

Deep challenge: Why does dividing $-3x \geq 12$ by -3 reverse the sign? Give a numerical check.

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.