

## Teacher guide: Equation-solving pathway

Objective: Select equation and inequality methods appropriate to the tier.

Calculator condition: Non-calculator core; calculator optional only for checking where labelled.

### Learning Cycle plan

| Stage           | Time   | Teacher move                                                                                                                          | Evidence to collect                                             |
|-----------------|--------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Connect & Check | 5 min  | State the objective and timeline. Retrieve graph transformations pathway or a prerequisite. Diagnose a common error before modelling. | Independent written response, correction or verbal explanation. |
| Share           | 7 min  | Pairs compare methods or predict a result for equation-solving pathway. Ask for a reason, not only an answer.                         | Independent written response, correction or verbal explanation. |
| Present         | 10 min | Foundation: linear equations and number-line inequalities. Higher: iteration, quadratic inequalities and regions                      | Independent written response, correction or verbal explanation. |
| Apply           | 25 min | Check solutions against the original conditions; explain a boundary Use guided support, then remove it for independent working.       | Independent written response, correction or verbal explanation. |
| Recall & Review | 8 min  | Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.  | Independent written response, correction or verbal explanation. |

### Differentiation

- All learners reach the same objective; route choice changes the journey, not the standard.
- Use visual, method and explanation routes to support access.
- Remove prompts before exit evidence.
- Use stretch and deep challenge only after the core method is secure.

### Assessment response

- Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

# Recall & Review: feedback and extension integration

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## Lesson L087: Equation-solving pathway

Objective: Select equation and inequality methods appropriate to the tier.

### 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  $3x^2 - 15x = 0$  and check both solutions.

Deep challenge: Solve  $x + y = 11$  and  $2x - y = 4$ , then show both checks.

### 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/C selected to purpose; label each question.