

## Learner workbook: Simultaneous equations

Objective: Solve simultaneous equations and interpret the solution as a common point.

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

### L061 Simultaneous equations



**balanced operations + independent check**

Objective: Solve simultaneous equations and interpret the solution as a common point.

### Connect & Check

- State the objective and timeline. Retrieve algebra pathway and repair or a prerequisite. Diagnose a common error before modelling.
- Write one starting question you want answered today.

### Choose your route

|                                                                            |                                                                                    |                                                                                        |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| <b>Route A: Visual</b><br>Use a diagram, graph, table or annotation first. | <b>Route B: Method</b><br>Use a worked method, formula or calculation chain first. | <b>Route C: Explain</b><br>Start with words: what is known, what is changing, and why. |
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### Share

- Pairs compare methods or predict a result for simultaneous equations. Ask for a reason, not only an answer.

### Present

- Eliminate or substitute and check both equations; Higher: linear-quadratic systems

### Apply: supported to independent

**Recall:** Retrieve the key fact or method needed for simultaneous equations.

Working: \_\_\_\_\_

Check/explanation: \_\_\_\_\_

**Core practice:** Solve  $3x+2y=16$  and  $x-2y=0$ .

Working: \_\_\_\_\_

Check/explanation: \_\_\_\_\_

**Reasoning:** Can  $x+y=5$  and  $2x+2y=12$  have a solution? Justify.

Working: \_\_\_\_\_

Check/explanation: \_\_\_\_\_

**Exam-style:** Solve an exam-style problem involving simultaneous equations. Show working, include a check and interpret your answer.

Working: \_\_\_\_\_

Check/explanation: \_\_\_\_\_

### Recall & Review

- Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.

WWW: \_\_\_\_\_ EBI: \_\_\_\_\_

# Recall & Review: feedback and extension integration

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## Lesson L061: Simultaneous equations

Objective: Solve simultaneous equations and interpret the solution as a common point.

### 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  $3x+2y=16$  and  $x-2y=0$ .

Deep challenge: Can  $x+y=5$  and  $2x+2y=12$  have a solution? Justify.

### My next-step response

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