

Learner workbook: Reasoning and multi-step problems

Objective: Explain a multi-step solution and justify method choices.

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

L106 Reasoning and multi-step problems



Objective: Explain a multi-step solution and justify method choices.

Connect & Check

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

Choose your route

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

- Pairs compare methods or predict a result for reasoning and multi-step problems. Ask for a reason, not only an answer.

Present

- Use assessment evidence to select a worked-example/problem pair.
- Fade prompts and review a fresh independent response with the learner

Apply: supported to independent

Recall: Retrieve the key fact or method needed for reasoning and multi-step problems.

Working: _____

Check/explanation: _____

Core practice: A £120 item is discounted 15% then its new price increases 10%. Find final price.

Working: _____

Check/explanation: _____

Reasoning: Explain why the order of two percentage multipliers does not affect the final number, but the story still matters.

Working: _____

Check/explanation: _____

Exam-style: Solve an exam-style problem involving reasoning and multi-step problems. 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

Lesson L106: Reasoning and multi-step problems

Objective: Explain a multi-step solution and justify method choices.

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 used my working and assessment evidence to identify the exact mathematical step that was secure and the specific misconception that needs attention.

Even Better If (EBI)

I will correct one precise step, explain why the correction works and complete a fresh delayed question without the original scaffold.

Integrated stretch and deep challenge

Stretch: A £120 item is discounted 15% then its new price increases 10%. Find final price.

Deep challenge: Explain why the order of two percentage multipliers does not affect the final number, but the story still matters.

My next-step response
