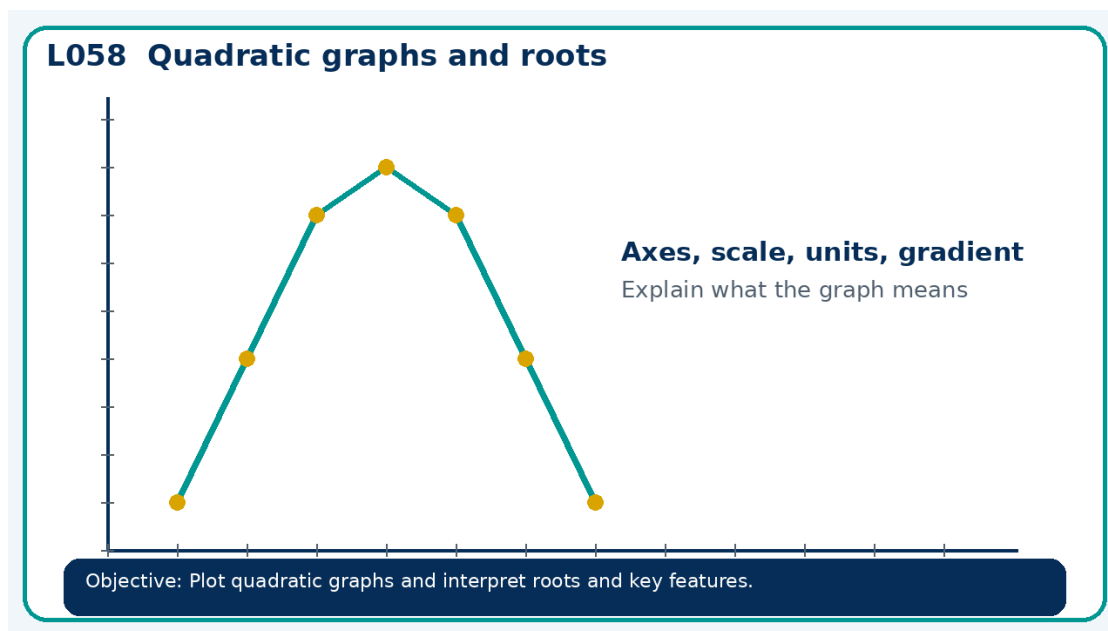


Learner workbook: Quadratic graphs and roots

Objective: Plot quadratic graphs and interpret roots and key features.

Calculator condition: Calculator allowed where labelled; non-calculator reasoning remains required.



Connect & Check

- State the objective and timeline. Retrieve quadratic expressions 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 quadratic graphs and roots. Ask for a reason, not only an answer.

Present

- Link factors, zeros and intercepts; distinguish graph estimates from exact roots

Apply: supported to independent

Recall: Retrieve the key fact or method needed for quadratic graphs and roots.

Working: _____

Check/explanation: _____

Core practice: For $y=x^2-4x+3$, find both roots and the turning point.

Working: _____

Check/explanation: _____

Reasoning: A quadratic has roots -1 and 5 . Write a monic equation and state its axis of symmetry.

Working: _____

Check/explanation: _____

Exam-style: A graph is drawn for a real context. Interpret the gradient, intercept or area as appropriate. State units and justify 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 L058: Quadratic graphs and roots

Objective: Plot quadratic graphs and interpret roots and key features.

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: For $y=x^2-4x+3$, find both roots and the turning point.

Deep challenge: A quadratic has roots -1 and 5 . Write a monic equation and state its axis of symmetry.

My next-step response
