

Teacher guide: Straight line equations

Lesson objective: Form and use straight-line equations, check whether points lie on a line and locate intersections.

Running order: Connect & Check 5 min; Share 7 min; Present 10 min; Apply 25 min; Recall & Review 8 min; feedback recording 5 min.

Calculator condition: Non-calculator core. Calculator optional for checking plotted intersections only.

Learning Cycle delivery notes

Connect & Check

- Retrieve gradient and intercept from $y = 2x + 1$ and $y = -x + 4$.
- Predict where two lines might meet before calculating.

Share

- Compare table, graph and equation routes.
- Explain why equal gradients create parallel lines when intercepts differ.

Present

- Use $y = mx + c$. Substitute a point to test it.
- For intersections, set the two y -values equal, solve for x , then find y .

Apply

- Form equations from a graph, a table and two coordinates.
- Find intersections using substitution and confirm on a sketch.

Recall & Review

- Check a point against a fresh line equation.
- Decide if two lines intersect, are parallel or are the same line.

Differentiation and route choice

- Learners choose visual, method or explanation routes but must produce the same final mathematical evidence.
- Remove prompts before the exit evidence.
- Use extension tasks only after the core method is secure.

Assessment response

- Use the mini-test, independent workbook response and exit evidence against the objective. Group shared errors for the next Connect & Check.

Recall & Review: feedback and extension integration

Lesson L042: Straight line equations

Objective: Form and use straight-line equations and locate intersections.

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: Find the equation of the line through $(2, -1)$ and $(6, 7)$.

Deep challenge: The lines $y=3x-4$ and $6x-2y=8$ are claimed to intersect. Test the claim.

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.