

Lesson 1

Oral and mental starter 37

Curriculum objectives

- To describe positions on the full coordinate grid (all four quadrants).

Success criteria

- I can draw and label axes.
- I can plot the positions of points in all four quadrants.

You will need

General resources

'Grids'

Equipment

Individual whiteboards

Differentiation

Less confident learners

Ask children to work within one quadrant at a time, and give them suggestions about what shape to draw (square, rectangle, parallelogram and so on).

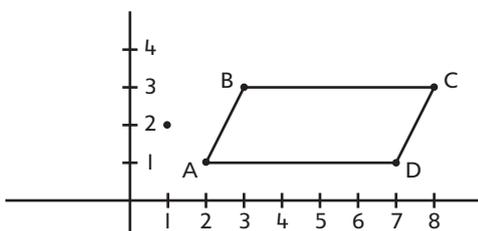
More confident learners

Encourage children to draw more complex shapes, including those which cross the axes.

Main teaching activities

Whole-class work: Display grid A from photocopiable page 'Grids' from the CD-ROM. Ask the children which is the *x*-axis and which is the *y*-axis. Recap important vocabulary, ensuring that the children are fully conversant with *x*-axis, *y*-axis, *quadrant* and *origin*.

Tell the children that you are going to label the axes on the grid. Ask them to tell you where you should start. Elicit: at the origin, which is where the two axes meet. Establish that this is the point (0,0). Use this to recall that a point on the grid can be identified by its *coordinates*, the two numbers used to pinpoint the position. Discuss that coordinates tell us how many steps across and how many steps up or down from the origin a point is. Show the children that coordinates are written in brackets and that the *x*-coordinate (referring to the *x*-axis) is always written first. Point to different points on the grid and ask the children what the coordinates are. Now show the grid with this parallelogram drawn on labelled A, B, C, D:

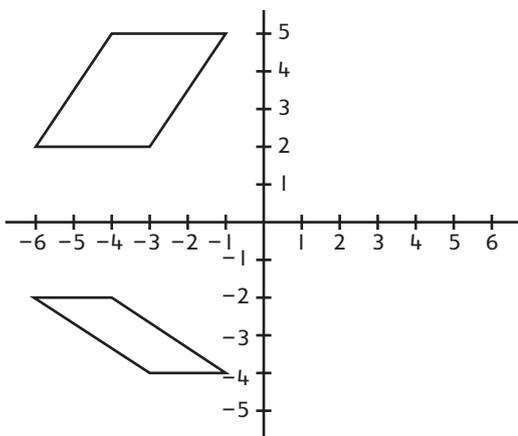


Point to position A on the grid and ask the children for the coordinates (2,1). Check that they recall how to write down pairs of coordinates, including that the numbers are enclosed in brackets. Ask for the coordinates of each other points.

Paired work: Organise the children to work in pairs on grid

paper. Explain that one child should draw a simple shape, without showing their partner, and then tell their partner the coordinates for them to draw the shape. Ask them to compare their shapes before they swap roles.

Whole-class work: Now display the second grid, which illustrates all four quadrants. Explain the numbering of each quadrant (first is top-right, second is top-left, third is bottom-left and fourth is bottom-right.) Ask the children to help you label the *x*- and *y*-axes, establishing that the *x*-axis in the second and third quadrant and the *y*-axis in the third and fourth quadrants will have negative numbers. Fill in the axes labels. Draw a parallelogram in the second quadrant and ask the children for the coordinates:



Check that the children understand that the *x*-coordinate will be negative. Repeat for the third and fourth quadrants.

Paired work: Let the children carry on with the activity begun above, but this time drawing shapes with coordinates using all four quadrants.

Progress check: Visit the pairs as they work, particularly those you wish to assess. Check that the children are labelling the coordinates correctly.

Review

Ask one pair to challenge the class with one of their shapes, then ask another pair to challenge the class with their most interesting shape. Discuss any difficulties, making sure that the children are clear about using coordinates with negative numbers.