YR4 Knowledge Organiser - Position and Direction

Key Concepts

- Describe positions on a 2D grid as coordinates in the first quadrant
- Describe movements between positions as translations of a given unit to the left / right and up / down
- Plot specified points and draw sides to complete a given polygon

Key Vocabulary

- position
- direction
- coordinates
- axis
- axes
- x-axis
- y-axis
- quadrant
- scale
- plot
- movement
- translation
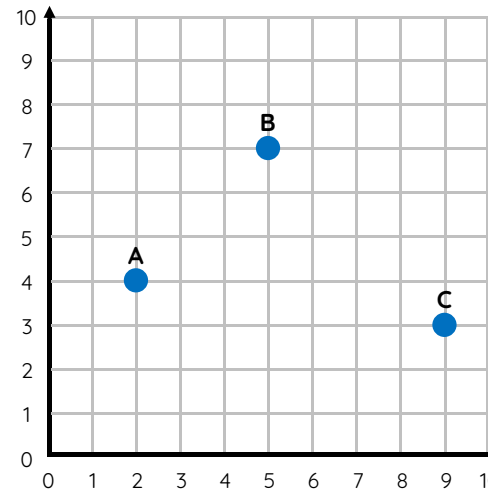- left / right / up / down

Describe Position

We can describe the position of a plotted point in a quadrant by using pairs of coordinates.

To find the coordinates, we find the position of a point on the (horizontal) x-axis first, followed by the point's position on the (vertical) y-axis.

The coordinates are noted in brackets with a comma between the x-axis and y-axis positions.


A = (2, 4)   B = (5, 7)   C = (9, 3)

In the first quadrant, the greater the x-axis coordinate, the further right the point is plotted. The greater the y-axis coordinate, the higher up the point is plotted.
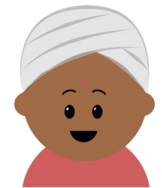
Draw on a Grid

Once we can read and write coordinates, we can begin to plot them. It is important that we plot points on the grid lines and not between them.

"I want to plot the point (6, 10). I need to count 6 along the horizontal x-axis, then 10 up the vertical y-axis."
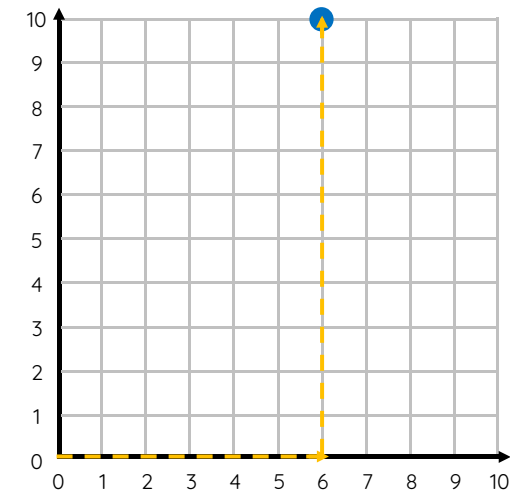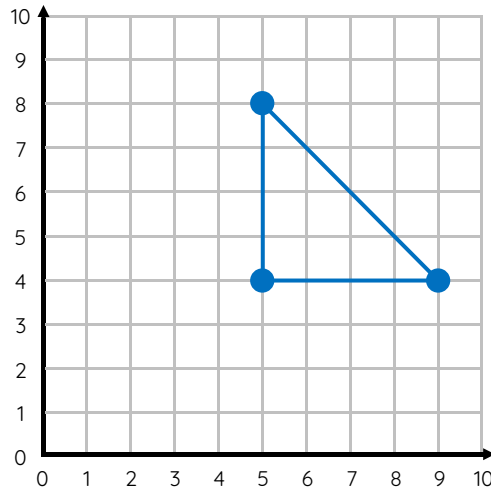

"Using a ruler can help you to check your point is lined up with the correct position on the grid lines."
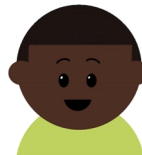
YR4 Knowledge Organiser - Position and Direction

Each corner (vertex) of a shape can be plotted as a pair of coordinates on a grid. Then, we can connect the points plotted to complete the shapes.
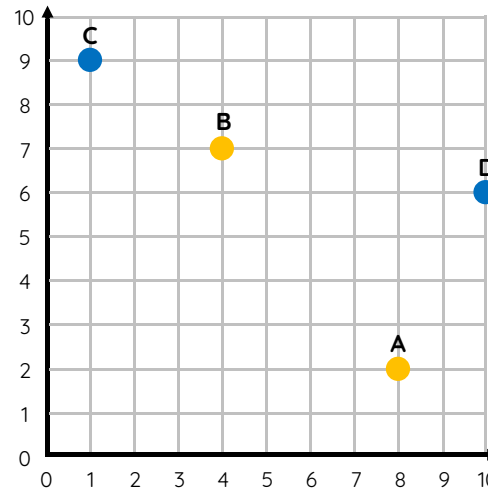

"We can connect the points to create a right-angled triangle."

"If we plot another point at (9, 8), we can connect the points to create a square instead."

Translate on a Grid

When we translate a point on a grid, we move it into a different position without changing it in any other way.


We describe translations using directional language, such as 'left', 'right', 'up', and 'down'.

Point A has been translated 4 left and 5 up to point B.

Point C has been translated 9 right and 3 down to point D.

We describe the horizontal (x-axis) left / right movement first, followed by the vertical (y-axis) up / down movement.

We can also change the position of a shape on a grid by translating one coordinate at a time.
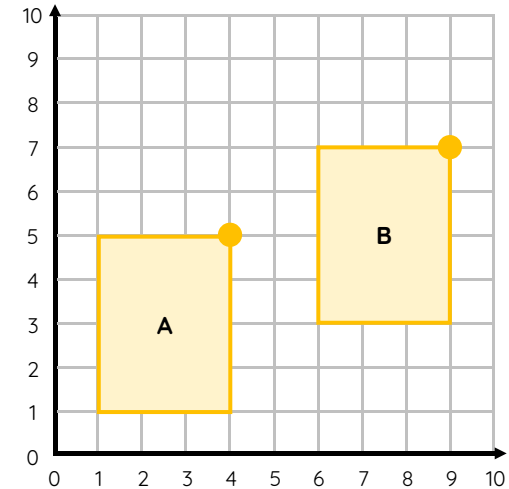
Shape A has been translated 5 right and 2 up to shape B.

We can use our understanding of translation to describe translations in reverse.

"To move shape B back to the position of shape A, we need to translate 5 left and 2 down."

As shown on the grid above, it can be helpful to pick one vertex to focus on, rather than looking at the whole shape.