3 Coordinates – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	**Write it 3 times** (English)
coordinate	
midpoint	

Recall

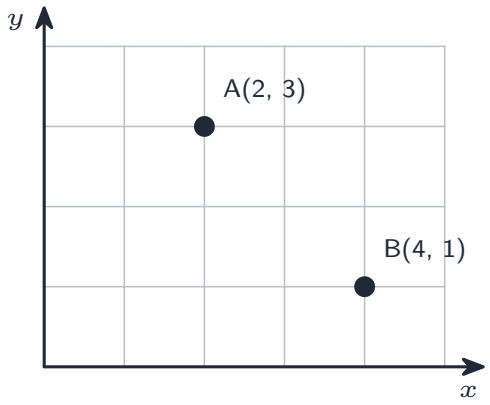
A **coordinate** grid locates points. The position (x, y) gives the across value, then the up value.

New ideas

Read these first, then do the Practice.

■ 1 Plotting points

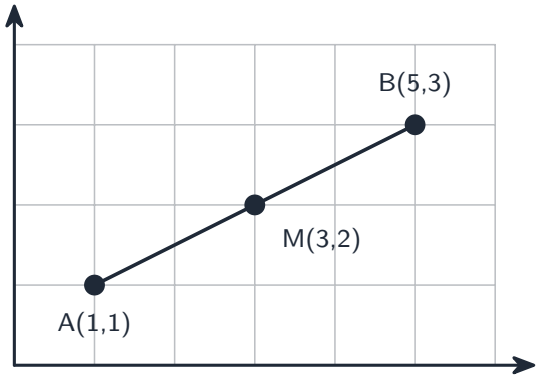
The first number is x (across), the second is y (up):



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2 The midpoint

The **midpoint** of two points is the average of their coordinates:



midpoint = average

$$\text{Midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right).$$

Watch out: a coordinate is always (**across, up**) – the x value first, then y. The **midpoint** is the *average* of the two x-values and of the two y-values.

Practice

Try these in order.

3.1 Write down the coordinates of a point 3 across and 2 up. [1]

3.2 In the point (5, 2), which number is the x-coordinate? [1]

3.3 Find the midpoint of (2, 4) and (6, 8). [2]

3.4 Find the midpoint of (0, 0) and (10, 4). [2]

3.5 Point A is (3, 1) and point B is (3, 7). What is special about the line AB? [1]

3.6 Challenge. A is $(1, 2)$ and the midpoint of AB is $(4, 5)$. Find the coordinates of B. [3]