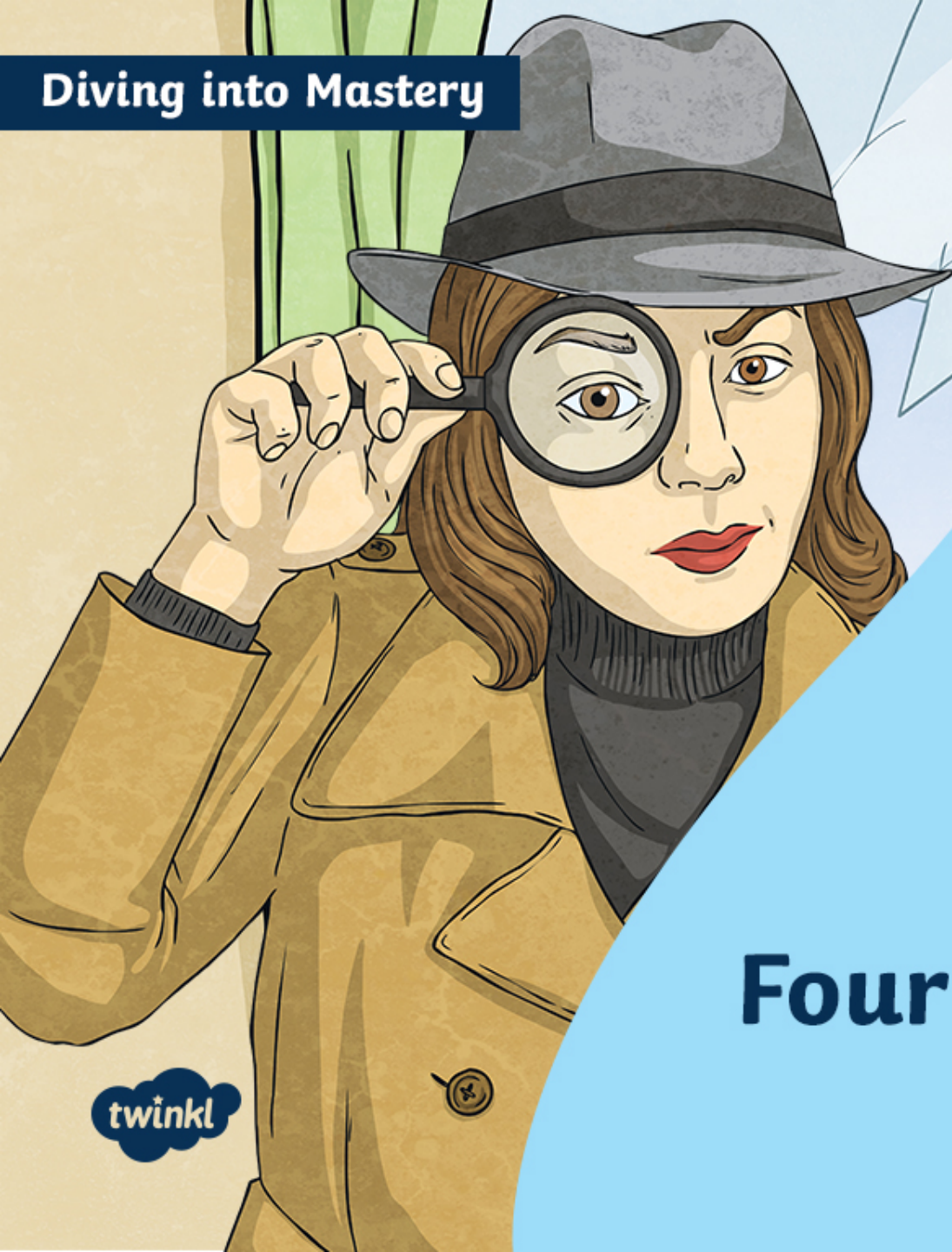


Diving into Mastery



# Four Quadrants



# Aim

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





## Four Quadrants

## Diving



The vertices of the two polygons show where the secret agent found important evidence.

What are the coordinates of the vertices of the trapezium?

What are the coordinates of the vertices of the isosceles triangle?

**Isosceles Triangle:**

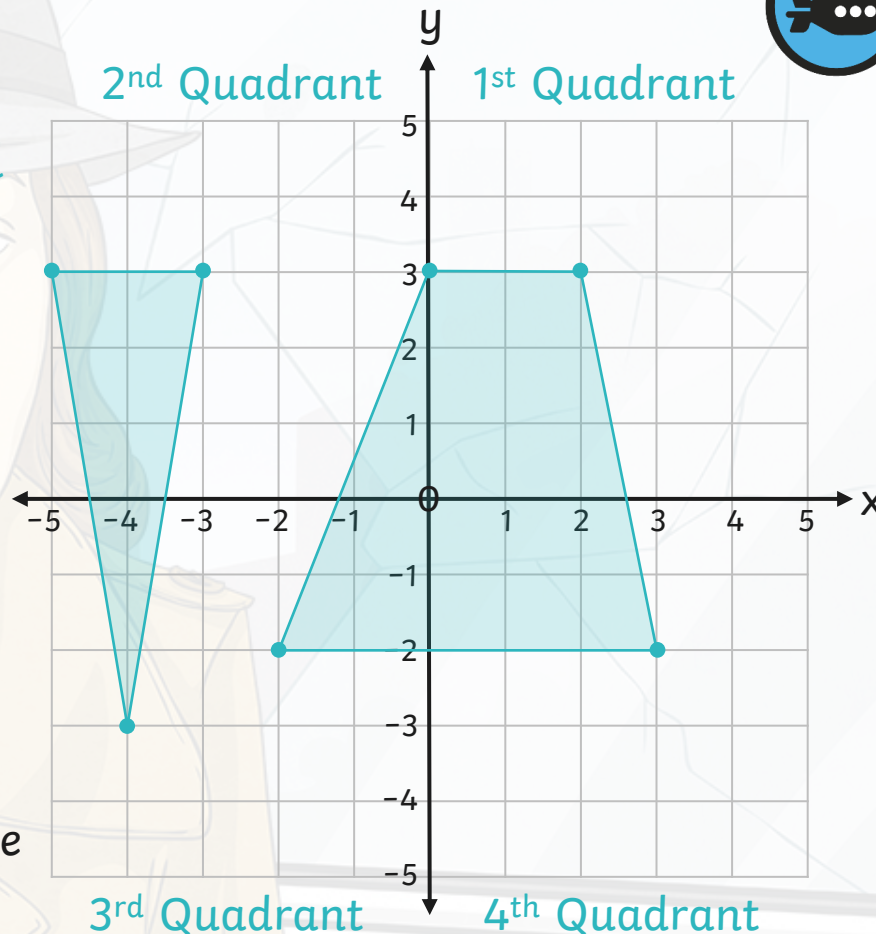
$(-4, -3)$   $(-5, 3)$   $(-3, 3)$

**Trapezium**

$(-2, -2)$   $(3, -2)$   $(2, 3)$   $(0, 3)$

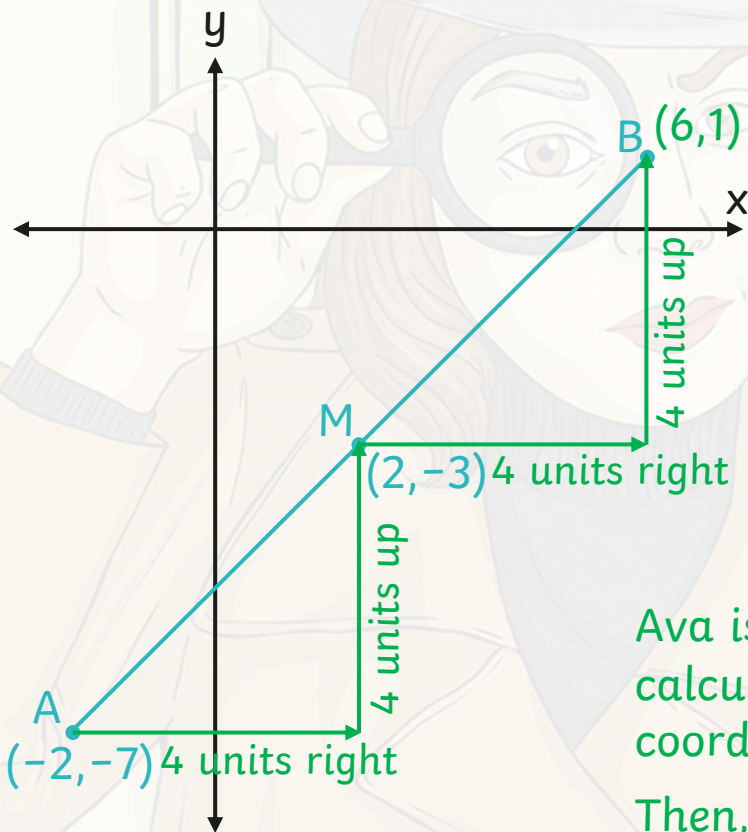
What do you notice about all of the coordinates in the third quadrant?

Points in the third quadrant always have a negative x-axis coordinate and a negative y-axis coordinate.





Charlie, the secret agent, asked his partner Ava this question to establish where fingerprint B was found.



Ava

In order to find the coordinates of point B, I will just need to double the coordinates of the midpoint. The coordinates of B must be  $(4, -6)$ .

Is Ava correct? Explain your reasoning.

Ava is incorrect. To find point B, she needs to calculate the difference between each x and y coordinate of point A and the midpoint M.

Then, she should add this difference on to each x and y coordinate of the midpoint.

The coordinates of B are  $(6, 1)$ .

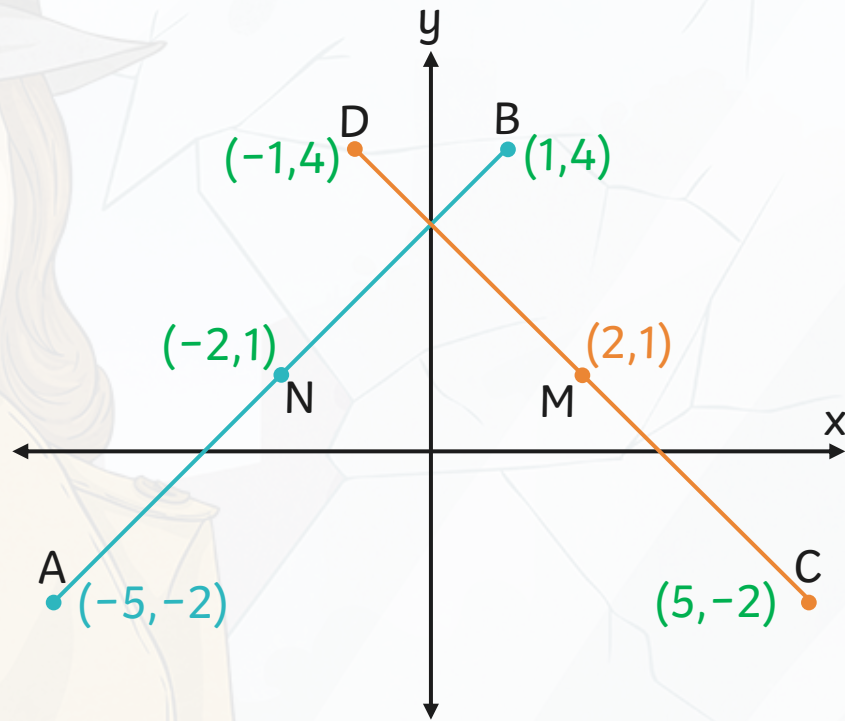




Lines AB and CD are congruent.

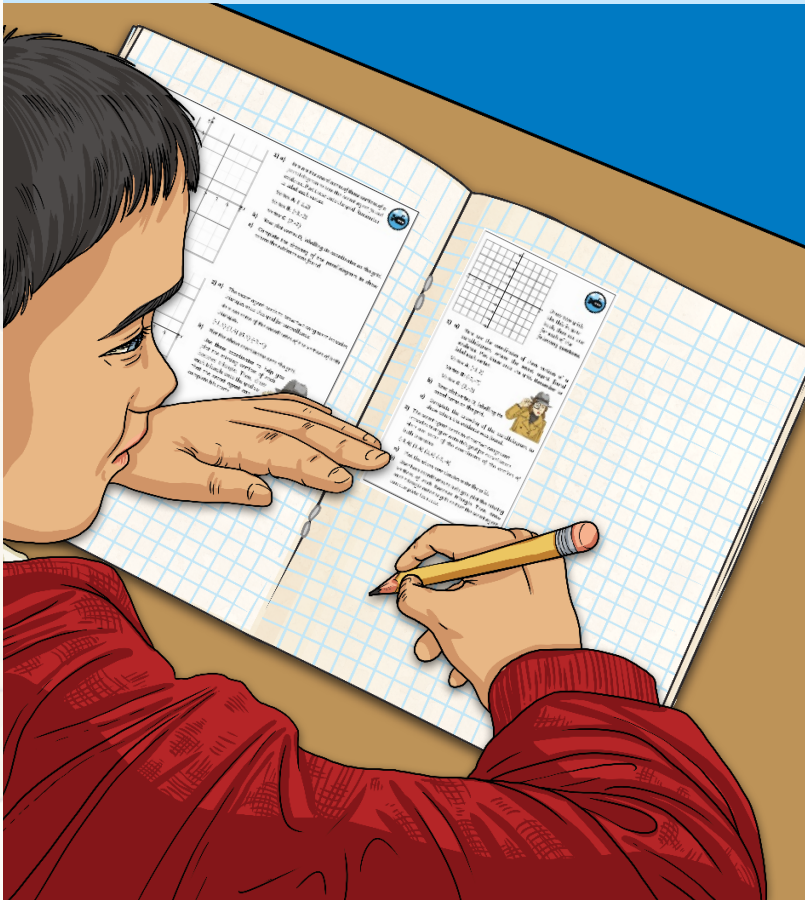
M and N are the midpoints of each line, where important fingerprints were found.

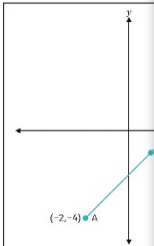
Use the information on the coordinate grid to find the missing coordinates to show where the fingerprints were detected.



# Four Quadrants

Dive in by completing your own activity!





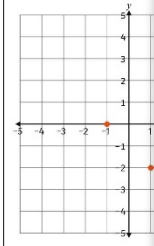
$(-2, -4)$  A

1) a) Here are the coordinates of three vertices of a parallelogram where the secret agent found evidence. Plot these onto the grid. Remember to label each vertex.

Vertex A:  $(-1, 2)$   
Vertex B:  $(-3, 2)$   
Vertex C:  $(2, -2)$

b) Now plot vertex D, labelling its coordinates on the grid.


c) Complete the drawing of the parallelogram to show where the evidence was found.






2) a) The secret agent needs to draw two congruent isosceles triangles onto this grid for surveillance. Here are some of the coordinates of the vertices of both triangles.

$(1, 4)$   $(1, 4)$   $(5, 4)$   $(3, 4)$

b) Plot the above coordinates onto the grid. Use these coordinates to help you plot the missing vertices of each isosceles triangle. Then, draw each triangle onto the grid so that the secret agent can complete his route.





# Need Planning to Complement this Resource?

## National Curriculum Aim

Describe positions on the full coordinate grid (all four quadrants).

For more planning resources to support this aim, [click here](#).

This screenshot displays a collection of resources for the 'Olympic Sports Coordinates' unit. At the top, there are three video thumbnails: 'Olympic Sports Coordinates' featuring a woman and a grid, 'The Four Quadrants' with a grid and colored quadrants, and 'Olympic Coordinates' with a large play button. Below these are three worksheets: 'Position and Direction: Olympic Coordinates', 'Olympic Sports Coordinates', and 'Olympic Coordinates'. The worksheets include sections for 'Lesson Objectives', 'Resources', 'Teacher Notes', and 'Pupil Learning'. The Twinkl Planit logo is visible in the bottom right corner.

This screenshot displays a collection of resources for the 'People of the Past Coordinates' unit. At the top, there are three video thumbnails: 'People of the Past Coordinates' featuring a woman and a grid, 'People of the Past Coordinates' with a large play button, and 'Describing Positions' with a grid and a portrait of a man. Below these are three worksheets: 'Position and Direction: People of the Past Coordinates', 'People of the Past Coordinates', and 'People of the Past Coordinates'. The worksheets include sections for 'Lesson Objectives', 'Resources', 'Teacher Notes', and 'Pupil Learning'. The Twinkl Planit logo is visible in the bottom right corner.

Twinkl Planit is our award-winning scheme of work with over 4000 resources.







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