

Year 6 Maths: Geometry - Position & Direction.

KEY WORDS

Quadrant	Reflect
Co-ordinate	Mirror Line
Plot	Translation
Describe	Reflection
Y-axis	Horizontal
X-axis	Vertical

SEQUENCE:

Carry out a reflection using one of the axes as a mirror line

Draw and translate simple shapes

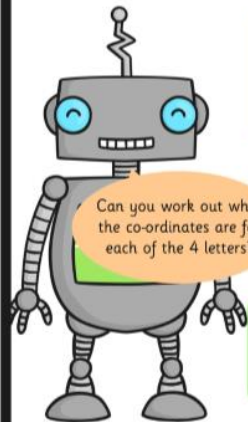
Use coordinates to describe the position of a point in all four quadrants.

Use coordinates to plot the position of a point in any of the four quadrants



Co-ordinates in the 4 Quadrants

Warning! This work involves negative numbers. Remember to follow the same rules for creating co-ordinates – x before y.



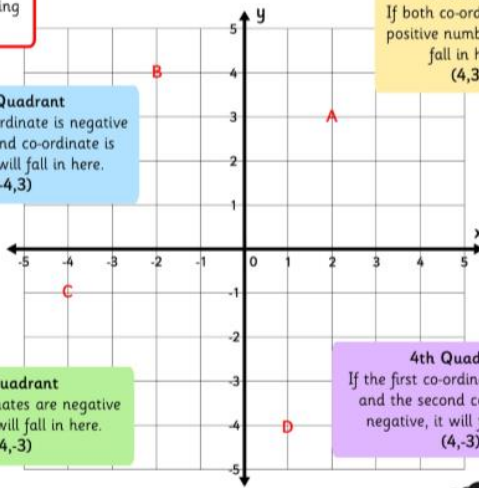
Can you work out what the co-ordinates are for each of the 4 letters?

2nd Quadrant
If the first co-ordinate is negative and the second co-ordinate is positive, it will fall in here.
(-4,3)

3rd Quadrant
If both co-ordinates are negative numbers, it will fall in here.
(-4,-3)

1st Quadrant
If both co-ordinates are positive numbers, it will fall in here.
(4,3)

4th Quadrant
If the first co-ordinate is positive and the second co-ordinate is negative, it will fall in here.
(4,-3)

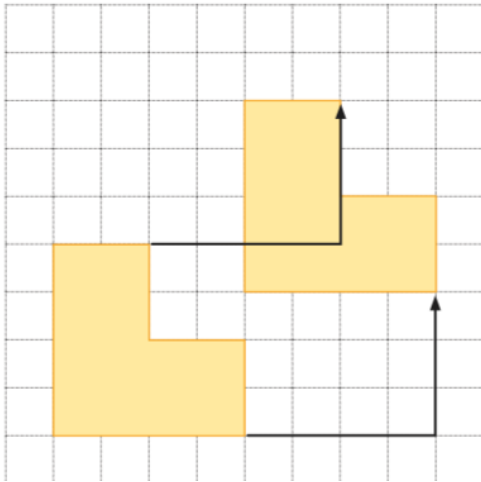
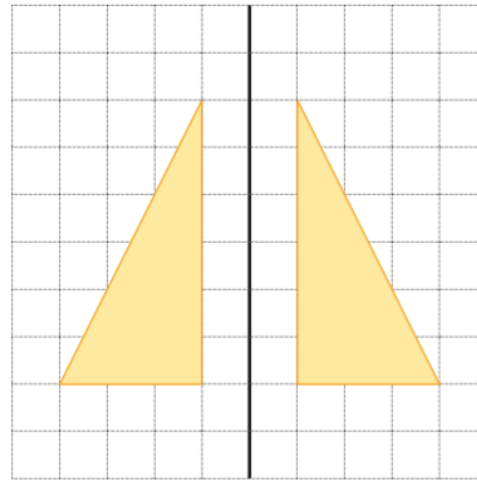


Reflection

A shape is reflected when it is flipped over a mirror line.

The reflected image is congruent to the original. This means that the measurements of the sides and angles have not changed.

Each point of the reflected shape is the same distance from the mirror line as the original shape.



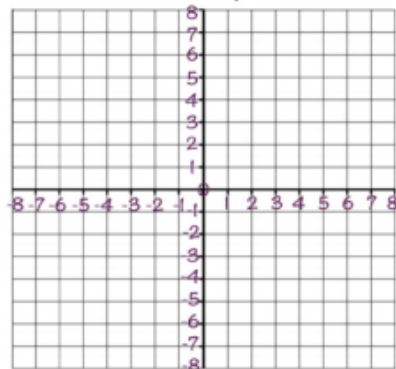
Translation

In maths, translation means moving an object on a grid. The object is moved without changing the size, turning or reflecting it.

When translating an object on a grid, it can move up or down, left or right.

Do It.

Plot and label the points...



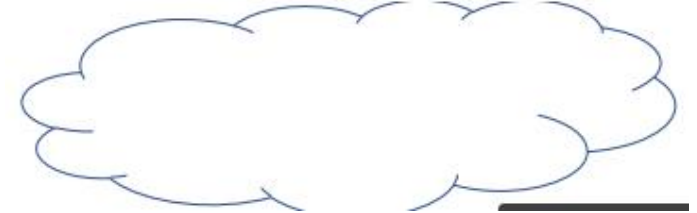
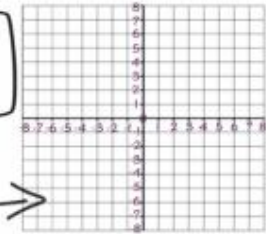
- L (-5, 1)
- O (-1, 3)
- V (-2, 4)
- E (1, 4)
- M (2, -3)
- A (3, -5)
- T (-1, -4)
- H (-4, -5)
- S (-5, -1)

Twist It.



If I plot a point in this quadrant, both the co-ordinates have to be negative

Do you agree with Coco?
Explain...



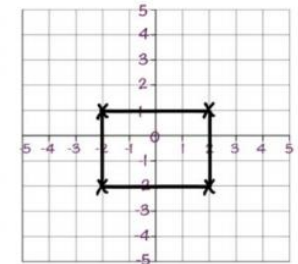
Deepen It.

6.6.1

Quadrant Quadrilaterals

Quadrant Quadrilaterals are only allowed to have one vertex in each quadrant...

If (2,1) is one of the vertices for each of these Quadrant Quadrilaterals find some possible co-ordinates for the other vertices...



- 1) Square
- 2) Trapezium
- 3) Parallelogram
- 4) Rhombus
- 5) Kite