Investigation

Moving shapes

You will need:

- Two quadrants grid
- Coloured pencils

What to do:

- Choose five different coloured pencils.
- Join the first set of co-ordinates (see lists below), using one colour of pencil. They are the vertices of a polygon. Follow the instruction to translate the shape, marking its new vertices in the same colour.
- Write the new co-ordinates at each vertex.

1. (1, 1), (1, 4), (5, 4), (5, 1). Translate the shape 2 squares to the left.
2. (1, 9), (2, 8), (4, 8), (5, 9), (4, 10), (2, 10). Translate the shape 3 squares down.
3. (-5, 5), (-5, 6), (-2, 5). Translate the shape 4 squares to the right.
4. (-8, 1), (-6, 3), (-2, 3), (-4, 1). Translate the shape 5 squares to the right.
5. (6, 6), (7,7), (9, 7), (10, 6). Translate the shape 5 squares to the left.

- Repeat for each set of points using a different colour for each one.
- What happens to the co-ordinates when you move a shape up? And down?
- What happens when you move a shape to the left? And to the right?

Challenge

- Draw any quadrilateral; then translate it two squares up AND two squares to the right. What happens to the x-values? And the y-values?
- Draw a second quadrilateral and translate one square down and three to the left.
  Can you work out the co-ordinates without drawing it first?
- Repeat for further shapes and combined movements.
  What will we do if the shape translates off the grid?!

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