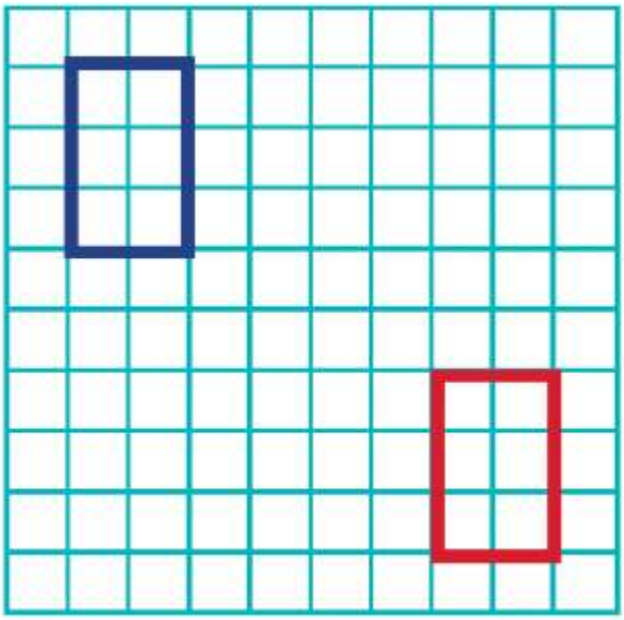
What is translation?

In geometry **translation means moving a shape into a different position**, without changing it in any way.

In Year 5 children are introduced to shape translation by giving them shapes on squared paper; they then need to be moved a certain number of squares up, down, left or right.

Translating shapes in KS2

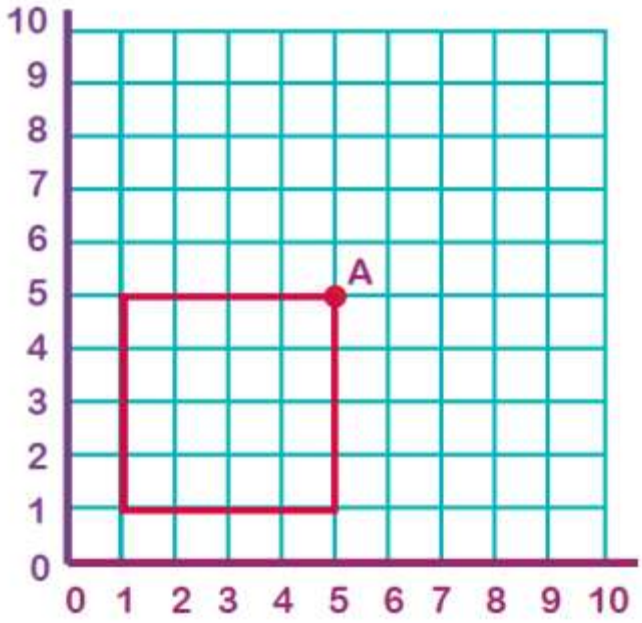
A child might be given a shape on squared paper like this (the rectangle in blue) and then asked to translate it 5 down and 6 to the right, resulting in the rectangle in red:



A good way to start making this concept clear to children is to give them **a cut-out shape to physically move across the page**.

Later, children need to learn to be able to translate a shape without this support. A good way to teach them to do this is to encourage them to **concentrate on each point of the shape at a time**. For example: when doing the above task, it would be best to start by putting the point of your pencil on the top left hand corner of the shape and then moving your pencil down 5 and right 6, then plotting the first point of your new shape with a dot. You would then need to do the same with the top right hand corner of the shape, the bottom left and then the bottom right.

Children may be asked questions that combine coordinates with translation, for example, they may be given a shape on a coordinates grid:



An example question they may be asked could be:

What will the co-ordinates of point A be when this square is translated 3 to the right and 4 up?

To answer this, they would need to translate the square and then give the co-ordinates of point A on the new shape, which would be (8, 9).