Position and Direction

Key Vocabulary

translate translation reflect reflection up

down right left coordinates quadrant x-axis

y-axis

horizontal

vertical

y Four Quadrants

Coordinates can use positive and negative numbers. Whether positive or negative, the x-axis coordinate is written first, followed by the y-axis coordinate.



Completing Shapes

Using the properties of a shape, a polygon can be completed on a grid.

To make a square, think of the square's properties.



All of a square's sides are the same length. If the completed sides are 2 units in length, the missing point must complete two more sides of 2 units.

To make a right-angled triangle, think of the triangle's properties.

A right-angled triangle should have three sides with one 90° angle.







Translation

A shape is translated when it is moved without being rotated or resized. Every point of the shape moves the same distance and in the same direction.





Shape 1 has been translated 4 units left and 3 units down.

Missing Coordinates



Shapes can be shown on unmarked grids.

Point a is in the same position along the x-axis as (5,2) and in the same position on the y-axis as (7,9).
Point a (5,9)
Doint his in the same position on the u axis as (10.4) . Both triangles will have the same width. The width of
Point b is in the same position on the y-axis as (10,4). Both triangles will have the same width. The width of
the right-hand triangle is 3. This means that the width of the left-hand triangle is also 3.
Point b (2,4)

· (F 0) [·]





Reflections

A shape is reflected when it is flipped over a line which acts as a mirror. Every point on the original shape is the same distance from the mirror line as the same point on the reflected shape. The original triangle has been reflected in the x-axis and in the y-axis.



