

Year 7 Spring 2

KEYWORDS:

Transformation A change in the **size, position** and/or **orientation** of a shape

Plot Mark a **coordinate** on a graph with a **x**

Equation Two **expressions** that are equal in value, shown using **=**

Scale Factor The **multiplier** that describes the change in size of a shape

Object The starting shape

Cartesian The **x** and **y** axis

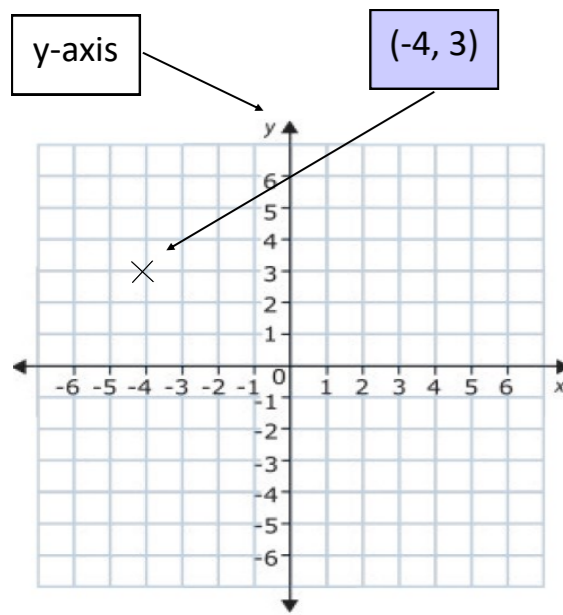
Origin The **coordinate** (0, 0)

Coordinate Written in pairs (x value, y value)

Graph A mathematical diagram

Image The **transformed** shape

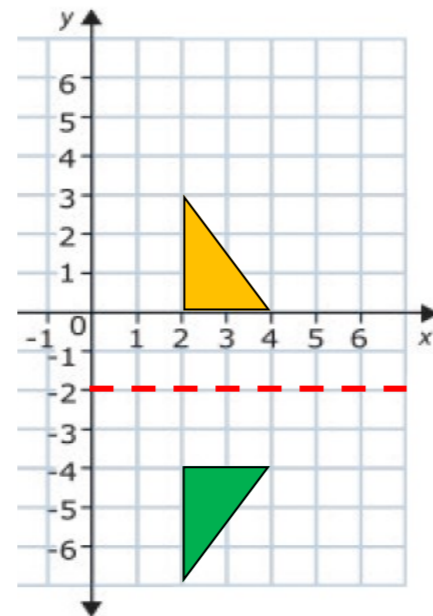
Axis



For coordinates:
 x value is how far left or right you have moved from the origin
 y value is how far up or down you have moved from the origin

Clip A1a, A1b

Reflection



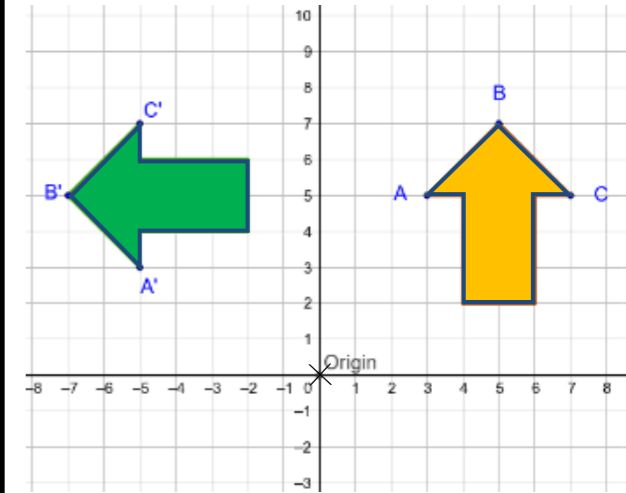
'Flip' the shape
 To describe a reflection you need:
Equation of the mirror line
 The shape stays the **same size**

Reflection in the line $y = -2$
 (orange to green)

Clip G4a, G4b

Rotation

'Turn' the shape



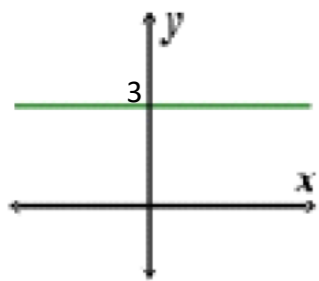
To describe a rotation you need:
Direction (clockwise or anti-clockwise)
Degrees
Centre of rotation

Rotation, 90° anti-clockwise, (0, 0)
 (orange to green)

Clip G6, 49

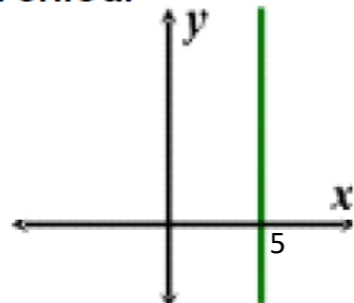
Equation of Lines

Horizontal



The equation of this line is $y = 3$

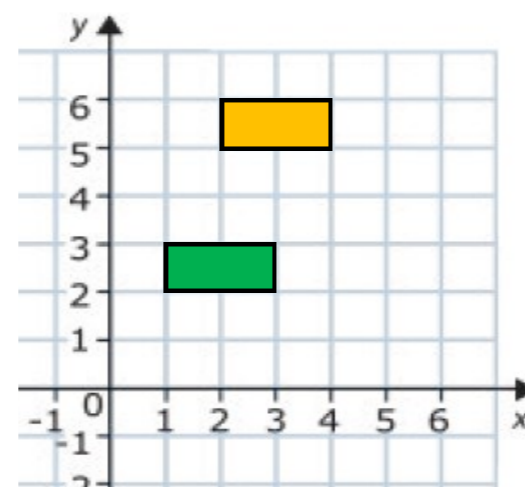
Vertical



The equation of this line is $x = 5$

Clip A5

Translation



'Shift' the shape
 To describe a translation you need:
 A **column vector**

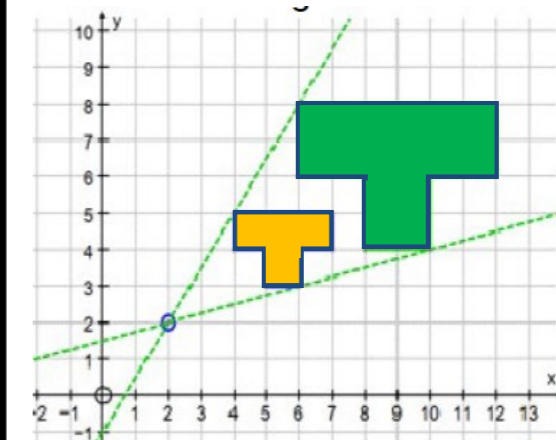
$$\begin{pmatrix} - & + \\ \leftarrow & \rightarrow \\ \uparrow & \downarrow \\ + & - \end{pmatrix}$$

Orange to Green $\begin{pmatrix} -1 \\ -3 \end{pmatrix}$ Green to Orange $\begin{pmatrix} 1 \\ 3 \end{pmatrix}$

Clip G5

Enlargement

'Change the size of the shape



To describe an enlargement you need:
Scale Factor
Centre of Enlargement
 The shape can get bigger **or** smaller

Enlargement, scale factor 2, (2, 2)
 (orange to green)

Clip G28, G34

