

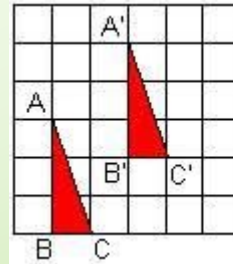
# YEAR 8 HIGHER

## TOPIC 5~ Transformations

What do I need to know:

1. Describe and carry out reflections, rotations and translations.
2. Describe an enlargement and enlarge a shape.
3. Enlarge a shape using fractional and negative scale factors.
4. transform 2D shapes using a combination of reflection, rotation, enlargement and translation.
5. Identify planes of reflection symmetry in 3D solids.

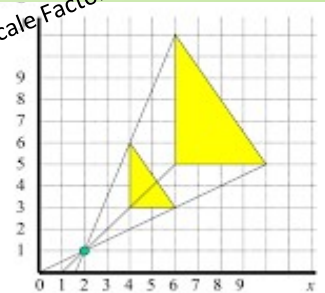
**TRANSLATION**– the movement of a shape written in a form known as vectors. Top number describes movement to the left or right. Bottom number describes movement up or down.



Each point moved 2 to the right and 2 up.

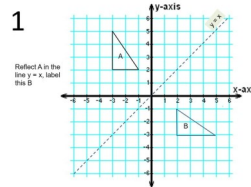
The vector describing this translation is:  $\begin{pmatrix} 2 \\ 2 \end{pmatrix}$

Centre of enlargement  
(2,1), Scale Factor 2



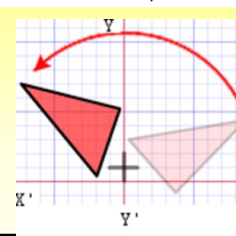
**ENLARGEMENT**—increase or decrease of a shape in size by a scale factor using a centre of enlargement.  
**Negative**—should look like they have been rotated eg scale factor  $-2$  should be rotated almost 2 times bigger. **Fractional**—shape decrease in size by a fractional scale factor eg  $1/2$  or  $1/3$

**REFLECTIONS:** image flipped like in a mirror stating equation of mirror line



**ROTATION**— turning of a shape clockwise or anti-clockwise  $90^\circ$ ,  $180^\circ$ ,  $270^\circ$  or  $360^\circ$  around a point known as centre of rotation

Eg,  $90^\circ$  anti-clockwise about (0,1) →



## PLANES OF SYMMETRY

What is a plane of symmetry?

A plane of symmetry divides a solid into two identical parts. Each part is a reflection of each other.

