WEEK 6

Transformation
- To transform a shape means to change its size or position

LI: Exploring Transformation, (Reflection, Translation, Rotation, and Enlargement)

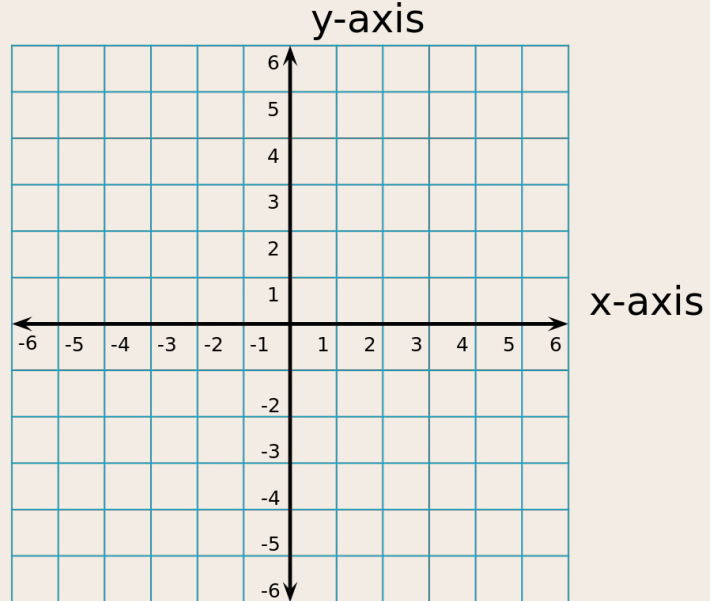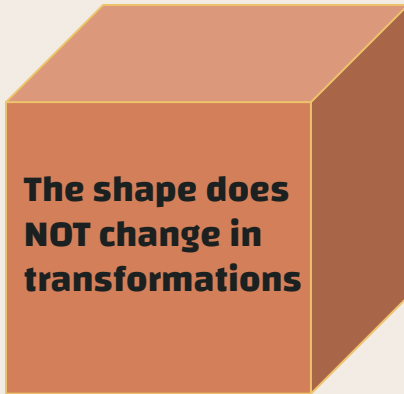# WORKSHEET: RECAP

Transformation	Everyday Terms	Mathematical Terms (New everyday Terms!)	Visual Example
Rotation			
Reflection			
Translation			

- Shapes are moved in 'units'.
- They are represented/ plotted on a graph.

The shape does NOT change in transformations
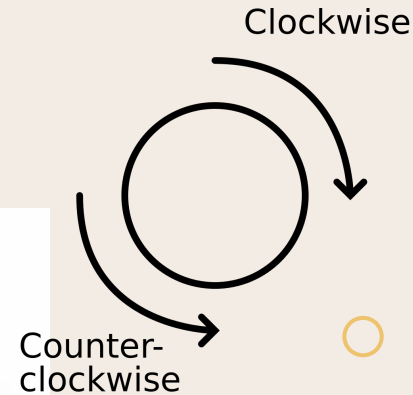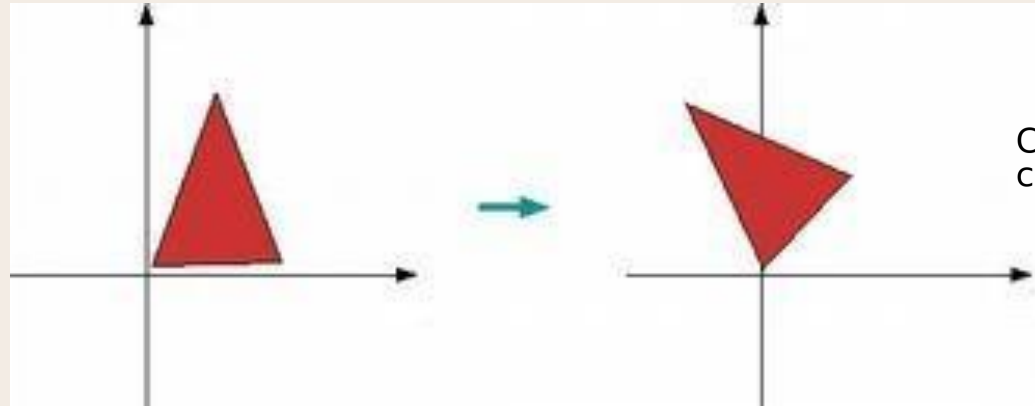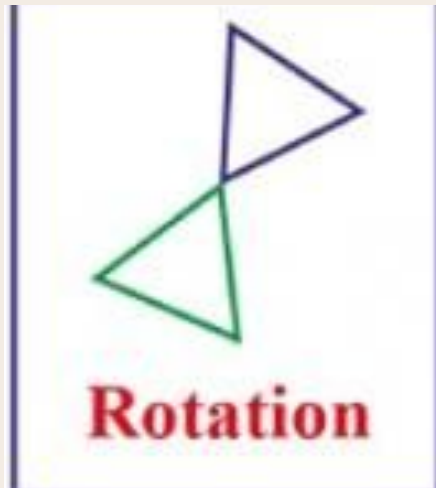
y-axis

x-axis

Video to help us understand better

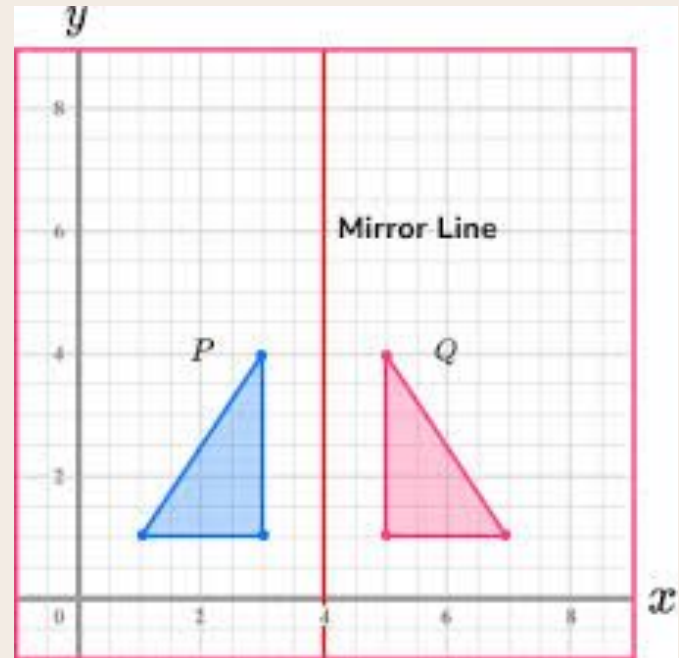# Explaining the different transformations: **Rotation**

Rotation: when an object is turned clockwise or counterclockwise around a given point. There is no change to the size of the shape.

Clockwise

Counter-clockwise

Rotation

Reflection

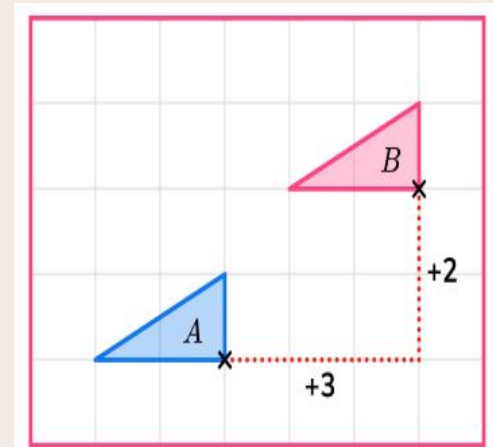**Reflection flips a shape over to create a mirror image.**

- **The second shape is always called the image.**

Translation

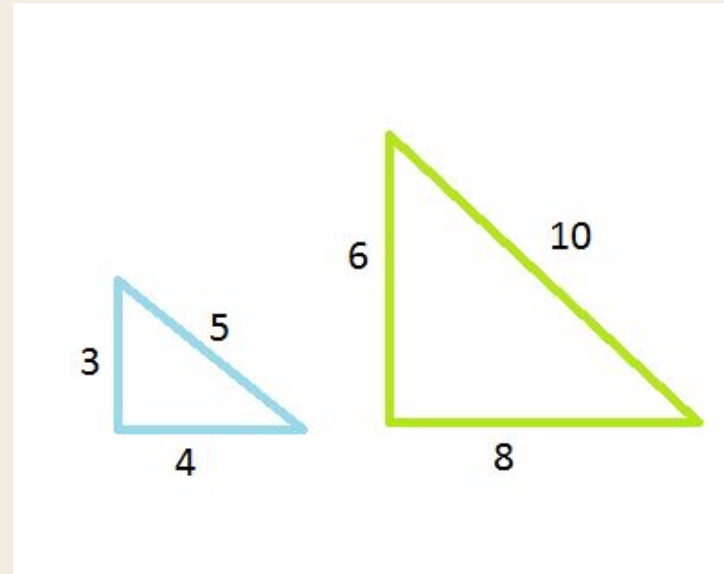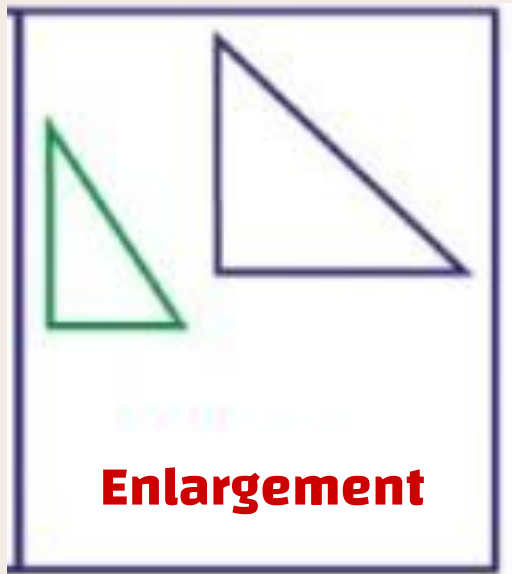**Translation is when a shape slides or moves.**

- **The size, shape and rotation does not change**
- **Can move horizontally and vertically**

Enlargement

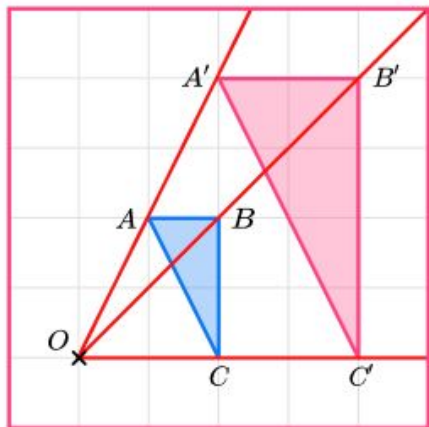Enlargement is where the size of the original shape is changed to make it bigger or smaller.

- It can be made bigger or smaller by a scale factor.
- There is also a **centre of enlargement.**

Enlargement

6

10

5

3

4

8

Centre of Enlargement

Centre of enlargement is a point which tells you where to draw an enlargement.

To use a centre of enlargement we need to draw lines from the centre of enlargement through the vertices of the original shape. These are called ray lines.
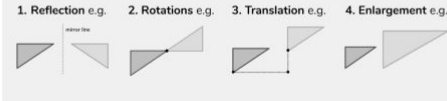

E.g. Here triangle ABC has been enlarged by scale factor 2 about a centre of enlargement point O. The new triangle is labelled A'B'C'.

THIRD SPACE
LEARNING

Follow up

– Cut and paste worksheet- highlight important words

Transformation

Reflection: When a shape is flipped over to create a mirror image. The second image is called an image.

Rotation: When an object is turned clockwise or counter clockwise around a given point. The size does not change.

Translation: When a shape moves or slides horizontally or vertically. The size, shape or rotation does not change.
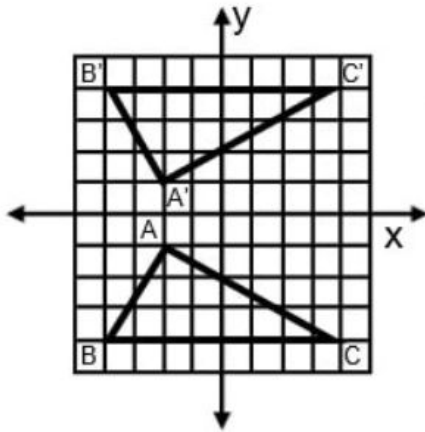
Enlargement: When the size of the original shape is changed to make it bigger or smaller. It can be made bigger or smaller by a scale factor. There is also a centre of enlargement.
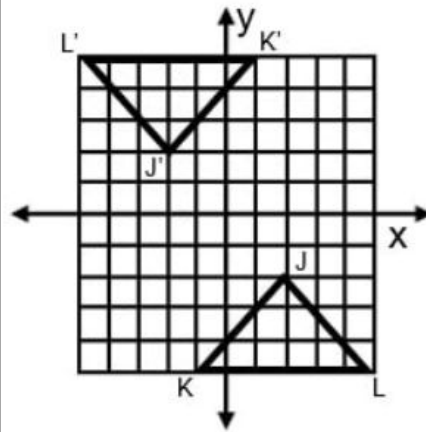
Let's try them together

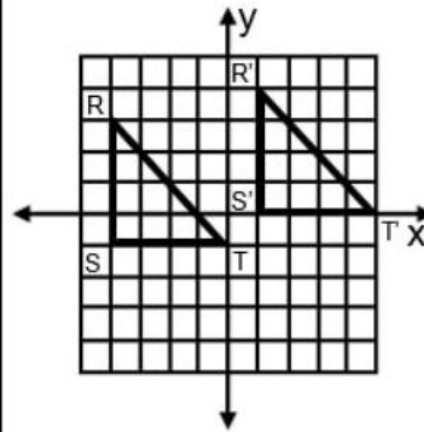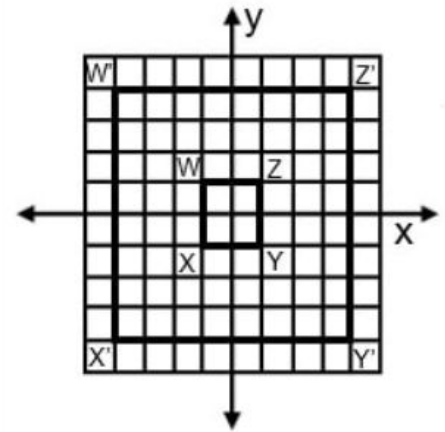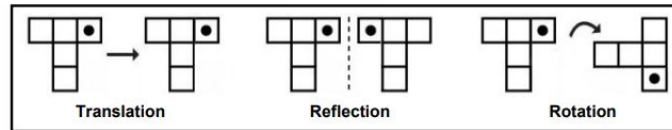**Identify the transformation happening in each figure**

Follow up activity

Identify the different types of transformations

Kahoot?

For early finishers

Week 6

LI : Experimenting with transformations to create art.

Translations recap
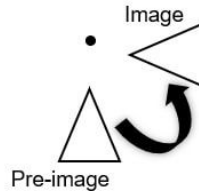
① Reflections
- "Flips" over a given line

Example:

Pre-image
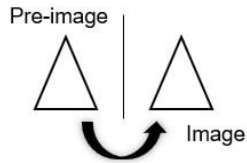
Image

Think about a mirror image!

② Rotations
- "Turns" about a point

Example:

Image

Pre-image

Think about turning a doorknob!

③ Translations
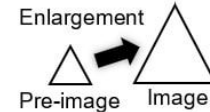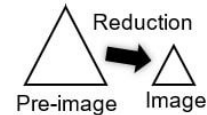- "Slides" to a new location

Example:
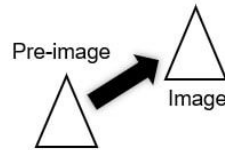
Pre-image

Image

Think about when you slide an object such as a bookcase!

④ Dilations
- "Enlarges" or "reduces" a figure

Example:

Reduction

Pre-image   Image

Enlargement

Pre-image   Image

The "pre-image" is the figure before it has undergone a transformation. The "image" is the result of the transformation. We denote the difference between the "pre-image" and "image" when we label our figure. For example,
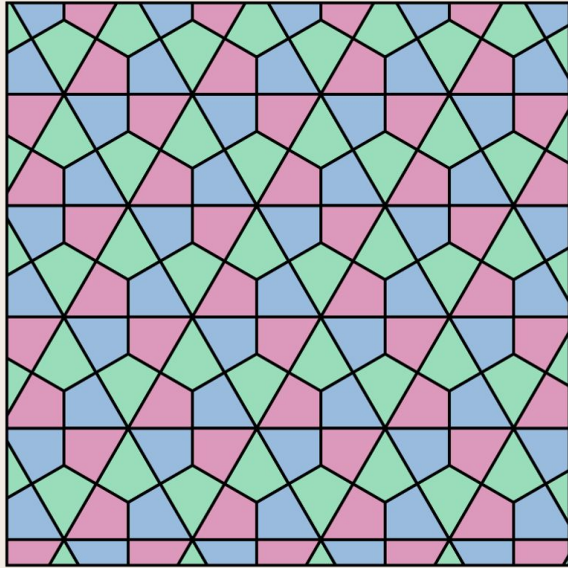
Points are denoted with capital letters

Pre-image   A

B   C

Image   A'

B'   C'
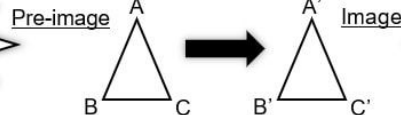
Points have a "prime" symbol now

Tessellations

A tessellation or tiling is the covering of a surface, often a plane, using one or more geometric shapes, called tiles, with no overlaps and no gaps.

Create your own tessellation art piece using shapes of your choice.
- No overlapping
- No gaps between pieces/shapes