

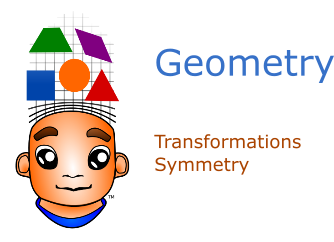
**PROJECT**

**Learner Name and Surname: ……………………………………………..**

**Name of the School:……………………………………………………..**

**Grade:……….**

**This Project consist of 12 pages**



|  |
| --- |
| **Grade 9**  **Project Term 3**  **Time: 1 Hour 30 minutes Marks 56** |

Geometric Transformations

Time: 1 Hour and 30 Minutes

Target Audience: Grade 9 Learners

Required Previous Knowledge: How to plot on coordinate graph.

Required Materials: Rulers, graph paper, pencils and coloured crayons.

This project is designed to conclude the geometric transformations unit with learners. It includes a review of translations and reflections on the coordinate grid. Learners will discover rules for what happens to coordinates under various transformations. **Learners will be working individually.**

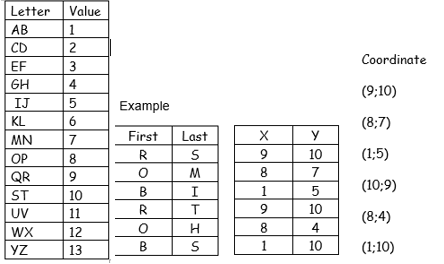
Assessment: Learners will be rewarded on the graphs that they make **and** the conclusions that they draw about the rules for each geometric transformation.

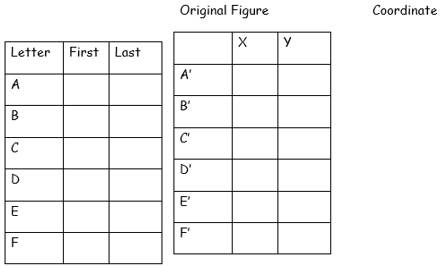
**Transformations**

**Then Creating Your Own Emblem**

You are going to use your name, a coordinate graph, some transformations to find your unique emblem.

* First, in the name chart, write the first letters of your first name. If your name is less than 6 letters long, start over on your name. (See the example where Rob only has three letters and must start over again with his name.)
* Now write in the first 6 letters of your last name. Again, if you need more letters start over at the beginning of your name.
* Use the letters-to-number conversion chart to get the coordinates for your original shape. The X coordinate come from the first name and the Y coordinate comes from the last name. If any ordered pairs **duplicate**, switch the x- and y-coordinates so that all coordinate pairs are unique.
* Graph your original shape on the coordinate grid on the next page by connecting the points along the perimeter of shape. Make sure your points are connected to form a closed figure. (This may mean that points are not be connected in order.)





Project Directions

1. **Graph your Original Figure**

* Using the coordinates from the previous page, graph your original figure. Be sure to rewrite your coordinates in the table provided.
* Make sure All shapes you graph form closed figures.

1. **Translation (x – 5; y-8)**

A translation is taking the original image and sliding it without turning it.

* Graph your original shape again.
* Now translate the shape by sliding your original figure 5 space left and 8 spaces down.
* Determine the coordinates for the image. (The new resulting shape)
* Graph the image on the coordinate graph.

1. **Translation (x +3; y+5)**

A translation is taking the original image and sliding it without turning it.

* Graph your original shape again.
* Now translate the shape by sliding your original figure 3 space right and 5 spaces up.
* Determine the coordinates for the image. (The new resulting shape)
* Graph the image on the coordinate graph.

1. **Reflection in X – Axis**

A reflection is taking the original image and flipping it along a line of reflection.

* Graph your original shape again.
* Now reflect the shape in the x- axis
* Determine the coordinates for the image. (The new resulting shape)
* Graph the image on the coordinate graph.

1. **Reflection in Y – Axis**

A reflection is taking the original image and flipping it along a line of reflection.

* Graph your original shape again.
* Now reflect the shape in the y- axis
* Find the coordinates for the image. (The new resulting shape)
* Graph the image on the coordinate graph.

1. **Your Emblem**

Now to make your emblem, which will stand for you:

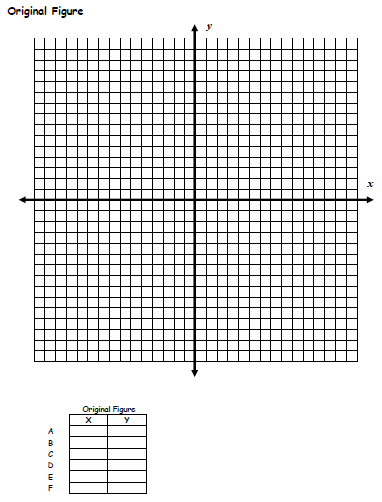
* Graph your original shape.
* Perform a sequence of **TWO unique transformations** on your original image.
* Your emblem will consist of **THREE** figures:

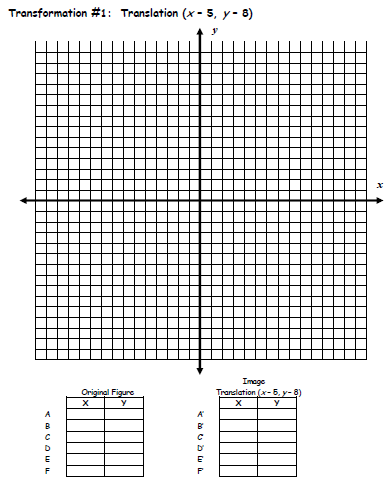
# Figure 1: Your original shape

# Figure 2: Your original shape transformed using a translation or reflection

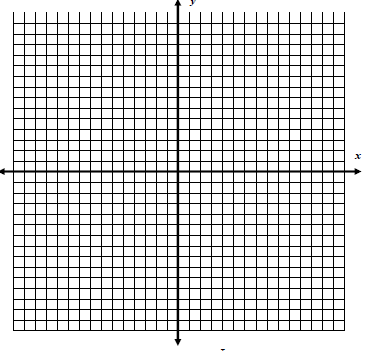
# Figure 3: The image transformed using a translation or reflection

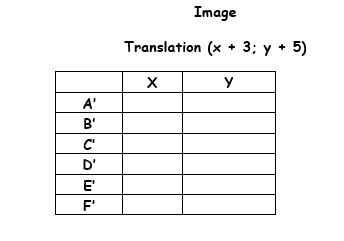
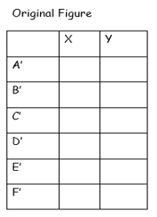
* Clearly state the sequence of transformation that you used in your emblem.
* Colour or decorate.
* Think of a slogan or motto to go with your emblem and write it underneath.

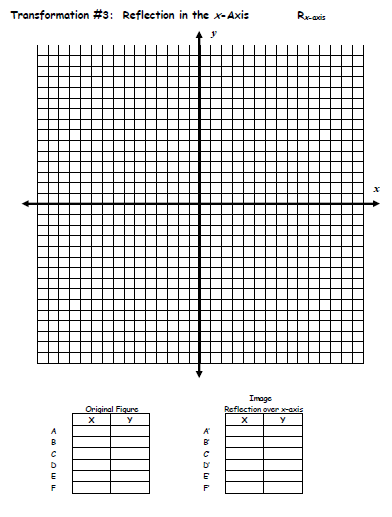




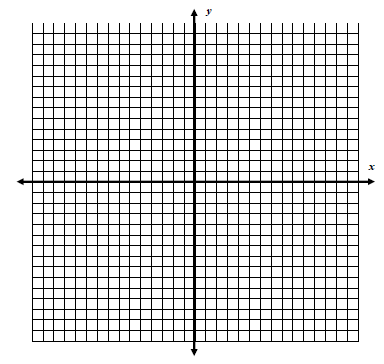
**Transformation #2: Translation (x + 3; y + 5)**

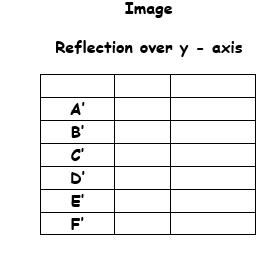
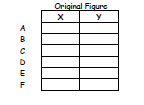






**Transformation #4: Reflection in the y – Axis R y - axis**





**Your Emblem**

