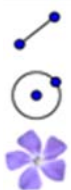







Geogebra Transformations Worksheet 2 – Enlargement.

1.		Open a new GeoGebra window, showing Graphics view only (you may use the 'Geometry' Perspectives shortcut or use view menu and style bar to hide axes).
2.		<p>Either:</p> <p> Create a Stick Man using Circle and Line Segment tools.</p> <p>Or:</p> <p> Import a pre-saved image (Under the Text Menu Icon).</p>
3.		Create a point which will be the Centre of Enlargement.
4.		Create a slider for your scale factor – name it 'sf'. Let it go between -5 and 5.
5.		Select Enlarge from Point icon (under reflection icon menu – NB: This may be called Dilation from a Point). Select your object (you will need to select all of your stick man by dragging the 'Move' Arrow over the whole figure) and then click on the Centre of Enlargement. A box with 'Factor' will appear; type "sf" and click OK.
6.		<p>Slide the sf slider and see the image under the enlargement.</p> <p>Move the centre of enlargement and see what happens.</p> <p>Change the object by moving one of the points on it and see what happens to the image.</p> <p>Can you explain why the image is located where it is, relative to the centre of enlargement?</p> <p>Can you explain what happens to the image with a negative scale factor and why?</p>
7.		<p>Draw a (construction) line which goes through the centre of enlargement and one of the points on the object. Change the colour of this line to green and style to dashed to show it is a construction line.</p> <p>Draw two more construction lines going through the centre of enlargement and different points on the object.</p>
8.		Repeat instruction 6 above and see whether you can explain the reasons clearer, now that you can see the construction lines
9.		<p>Extension Activity:</p> <p>Change the colour of the object to red to identify it as the original. You will need to select all of your stick man by dragging the 'Move' Arrow over the whole figure, then change the colour.</p> <p>Create more enlargement images using the Enlarge from Point icon, using the same centre of Enlargement and fixed scale factors of 0.25, 0.5, 1.5, 2, -1.</p> <p>Move the centre of enlargement and see what happens.</p> <p>Move a point on the original object and see what happens.</p> <p>Measure how far away from the centre of enlargement corresponding points are in each image. You can use the distance measurement tool or use a ruler.</p>
14.		<p>Copy and complete these sentences in your exercise book:</p> <p>All images are the same shape as the object.</p> <p>Corresponding points on all images lie on the same construction lines.</p> <p>All construction lines go through _____</p> <p>The ratio of image to object lengths of corresponding lines is _____</p> <p>The ratio of image to object distances from the centre of enlargement is _____</p> <p>Negative scale factors indicate that the image is _____</p> <p>The image for a negative scale factor is located _____</p> <p>A scale factor of 1 is _____</p> <p>A scale factor of 0 is _____</p>