Knowledge Rich Curriculum Plan

Year 7 Core – Similarity, Congruency and Transformations

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this, students need to already know that…*	Assessment
To learn how to identify congruent and similar shapes.	• Students will know that congruence is when two shapes are the same size and shape. • Students will know that two similar shapes are where one is an enlargement of the other. • Students will know that similar means two shapes are similar if the angles are the same size and the corresponding sides are in the same ratio. • Students will identify similar shapes including circles and regular polygons.		• Students need to know properties of 2D shapes.	Mini-Assessment 10
To learn how to calculate missing lengths in similar shapes.	• Students will know that two triangles are similar if all of the angles are the same size or if the corresponding sides are in the same ratio. They will know that either of these conditions will prove two triangles are similar. • Students will know how to calculate the length scale factor for a shape that has been enlarged. • Students will know how to use the length scale factor to find missing lengths in similar shapes.	Similar - having a resemblance in appearance, character, or quantity, without being identical. Similar Shapes – two shapes are similar when one is an enlargement of the other. When a shape is enlarged, the image is similar to the original shape. It is the same shape but a different size. Similar triangles – two triangles are similar if all of the angles are the same size or if the corresponding sides are in the same ratio. Either of these conditions will prove two triangles are similar. Scale factor – how much the shape has been enlarged, the scale factor tells us what the corresponding measures have been multiplied by	• Students will need to be able to recognise similar and congruent shapes	Mini-Assessment 10
To learn how to translate shapes.	• Students will know how to translate a shape by given units to the left/right up/ down. • Students will know how to use a column vector to write movements. • Students will know how to translate a shape by a given column vector.	Transform – change Transformation – in maths, a transformation is a process that manipulates a polygon or other two-dimensional object on a plane or coordinate system Translation – the process of moving something from one place to another.	• Students should know how to interpret a column vector as a movement	Mini-Assessment 10
To learn how to describe translations.	• Students will know how to describe a translation of a shape using units to the left/right up/ down. • Students will know how to write movements as column vectors. • Students will know how to describe a translation using a column vector.		• Students need to know how to translate 2D shapes.	Mini-Assessment 10
To learn how to reflect shapes in a mirror line.	• Students will know how to reflect a 2D shape using a horizontal or vertical mirror line. • Students will know how to reflect a 2D shape in a diagonal line.	Reflection – In maths, a reflection is a type of transformation where each point in a shape appears at an equal distance on the opposite side of a given line - the line of reflection Symmetry – the quality of being made up of exactly similar parts facing each other or around an axis.		Mini-Assessment 10

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To learn how to reflect shapes in the x-axis and y-axis.	• Students will know how to reflect a shape in the x-axis or y-axis. **Opportunity for challenge:** • Students will know how to reflect a shape in a line in the form x = a, y = b.		• Students need to know how to identify the x-axis and the y-axis.	Mini-Assessment 10
To learn how to rotate shapes.	• Students will know how to rotate a shape about a centre.	**Rotate** – turn **Clockwise** – in the same direction as the hands move around a clock (to the right) **Anti-clockwise** – in the opposite direction as the hands move around a clock (to the left) **Origin** – The origin is located at the intersection of the vertical and horizontal axes at the coordinates (0, 0)	• Students need to know how to plot and write coordinates	Mini-Assessment 10
To learn how to enlarge shapes.	• Students will know how to enlarge a shape by a positive scale factor. **Opportunity for challenge:** • Students will know how to enlarge a shape by a positive scale factor from a given centre of enlargement.	**Enlarge** – change the size **Enlargement** – a type of transformation where we change the size of the original shape to make it bigger or smaller by multiplying it by a scale factor **Scale factor** – how much the shape has been enlarged, the scale factor tells us what the corresponding measures have been multiplied by	• Students will need to know how to identify the length scale factor for enlargement.	Mini-Assessment 10