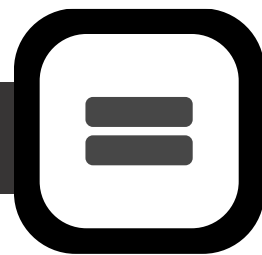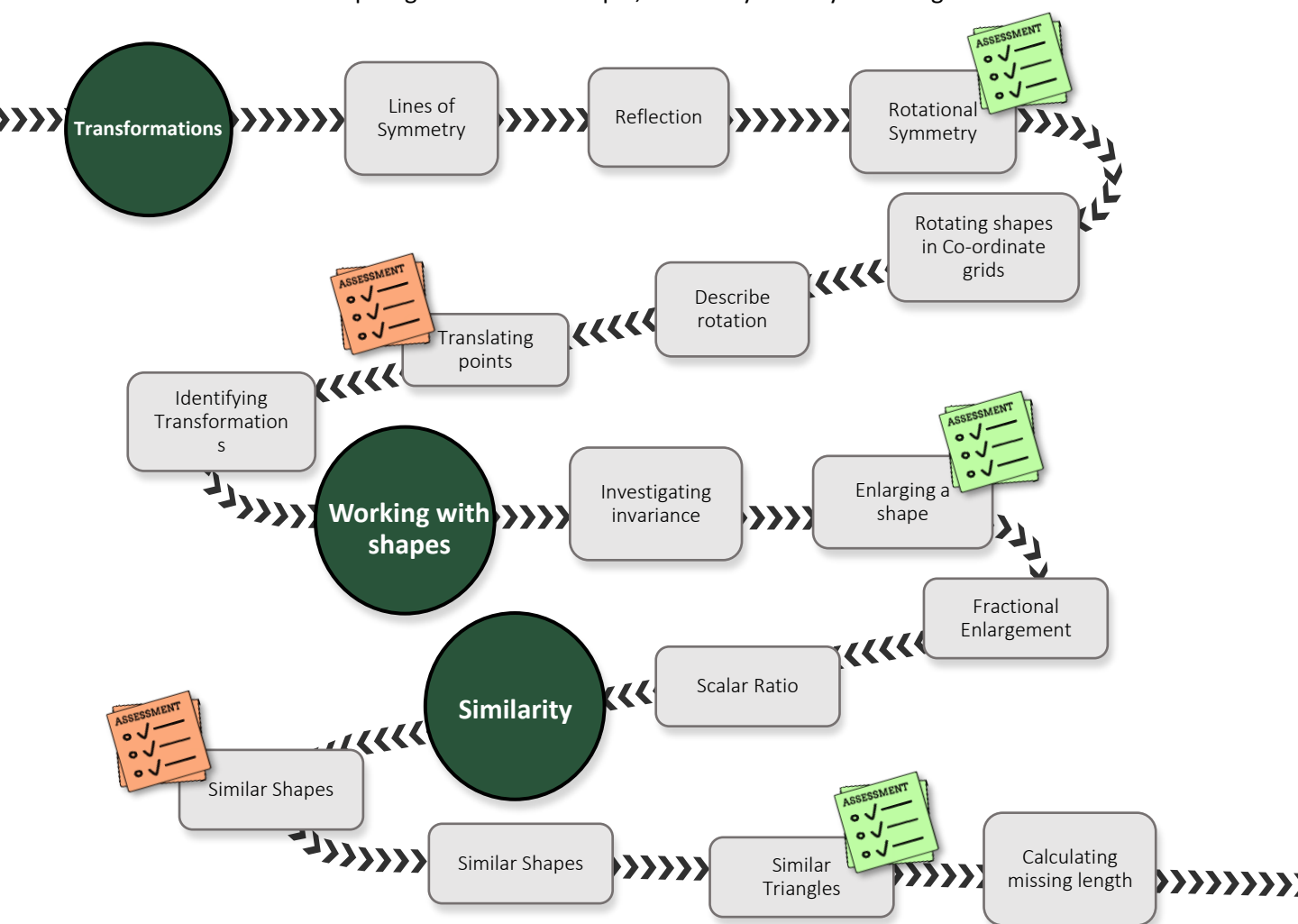# LEARNING
JOURNEY | MATHS

Transformations

Year 9 Summer 1 Half Term 5

Transformations are an important concept in mathematics that describe the changes in size, shape, and position of objects in space. They include translations, rotations, reflections, and dilations. One of the main reasons why we teach transformations in math is because they are fundamental in many areas of study, including geometry, physics, and computer science.

Transformations are used in careers such as architecture, engineering, and graphic design. For example, architects use transformations to create 3D models of buildings and to determine the optimal placement of features such as windows, doors, and staircases. Engineers use transformations to analyze the movement and deformation of structures, while graphic designers use them to create visual effects and animations. Furthermore, studying transformations in mathematics helps students to develop their spatial reasoning skills, which are essential in fields such as science, technology, engineering, and mathematics (STEM). It also helps students to understand complex geometrical concepts, such as symmetry and congruence.

Transformations → Lines of Symmetry → Reflection → Rotational Symmetry (ASSESSMENT)

Rotating shapes in Co-ordinate grids

Describe rotation ← Translating points (ASSESSMENT) ← Identifying Transformations

Working with shapes → Investigating invariance → Enlarging a shape (ASSESSMENT)

Fractional Enlargement

Scalar Ratio ← Similarity

Similar Shapes (ASSESSMENT)

Similar Shapes → Similar Triangles (ASSESSMENT) → Calculating missing length

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TUDOR HABITS AND VALUES: Working on transformations in mathematics involves a process of manipulating shapes and objects in space. It encourages students to focus on the process rather than just the end result, which helps to develop problem-solving skills and creativity. This emphasis on **process over product** can also help students to become more resilient and to learn from their mistakes.

VOCABULARY:
Object,   Invariant,
Image,   Vector
Congruent,