

<b>Transformations</b> <b>Level 5</b> <b>Strand: Geometry and Measurement</b> <b>Time: 3 Weeks</b>		 <b>St Hilda's</b> Collegiate School
<b>Key Competencies:</b>	<b>Achievement Objectives:</b>	<b>Learning Outcomes:</b>
<b>Thinking</b> <ul style="list-style-type: none"> <li>• Problem solving using estimation.</li> <li>• Problem solving using</li> </ul>	<b>Measurement</b> <ul style="list-style-type: none"> <li>• Define and use transformations and describe the invariant properties of figures and objects under these transformations.</li> </ul>	<b>Specific Strategies</b> <b>Resources</b> <ul style="list-style-type: none"> <li>• Practical problem solving using equipment such as mirrors, drawing pins and string to check solutions.</li> <li>• Ten Ticks activities level 6 pack 2</li> </ul>
<b>Literacy: using language, symbols and texts:</b> <ul style="list-style-type: none"> <li>• Using the cartesian plane, vectors and correct notation for angles, lines and points.</li> </ul>	<b>Purpose</b> <ul style="list-style-type: none"> <li>• Use the cartesian plane to describe transformations and the position of an image.</li> </ul>	<b>Relevant tasks/activities/content</b> <ul style="list-style-type: none"> <li>• ***Scale diagram co-operative planning exercise.</li> </ul>
<b>Relating to others:</b> <ul style="list-style-type: none"> <li>• Communicating translating using the cartesian plane.</li> </ul>		<ul style="list-style-type: none"> <li>• ****Scale diagram co-operative planning exercise.</li> </ul>

Key Vocabulary:

Reflection	Rotation	Enlargement
Translation	Axis	Vector
Centre	Order	Symmetry
Point	Line	Angle
Scale factor	Object	Image

## Assessment:

<b>Diagnostic</b> What do they know? What can they know?	<b>Formative</b> What are they learning? What do they need to learn?	<b>Summative</b> What have they learned? Can students articulate how they learned it? Student evaluation/reflection
Asttle pretest showing ability as measured against the geometry and measurement strand, level 5)	Mathletics activities.	Topic Test Scale diagram co-operative planning exercise.

Nb, The resources allow for differentiated learning through the selection of tasks for and within each class. The expectation is that each student will complete some of the tasks in each of the activity headings, by negotiation with her teacher.

## Resource and Teaching Order List:

1. Reflection, including the mirror line, line symmetry, invariant points.
2. Rotation, including centre of rotation, rotational symmetry and total order of symmetry. See starter problem, 'moving desks'.
3. Translation, including the use of vectors to describe and draw translations.
4. Transformations and co-ordinates.
5. Vector addition and subtraction.
6. Combined transformations

Enlargement using a centre of enlargement and a scale factor.

7. Fractional and negative scale factors.
8. Scale diagram cooperative planning exercise.
  - Translation to include use of SI and other metric units, prefixes and equivalents. Include pHet Estimation game.
  - Ten ticks Level 5 pack 3
  - \*\*\*Scale diagram cooperative planning exercise. Designing, building and inspection to be carried out between groups to translate measurements. Set out in much the same way as the rich task – the class are to design and construct a child care facility with playground included. Each group is to be given a different part of the whole build to design. Then, mixed up as per jigsaw activities, new groups formed as the builders. The inspection phase may be done by first groups or new groups or teacher to verify that the plans were followed etc.