

Discovering Patterns in Transformations

Translations

Place the Geoboard Template under your Communicator.

Set up your geoboard with four quadrants.

Draw a scalene triangle that is completely in Quadrant III. Name the vertices A, B, and C.

Record the coordinates of each vertex in the chart below.

<i>Coordinates of A</i>	<i>Coordinates of B</i>	<i>Coordinates of C</i>

Draw a new triangle that is translated 4 units to the right and 2 units up.

Label the corresponding vertices of the new triangle A', B' and C'. Record their coordinates in the chart below.

<i>Coordinates of A'</i>	<i>Coordinates of B'</i>	<i>Coordinates of C'</i>

Study the change made in the coordinates to find a pattern.

Let's try it again.

Draw a scalene triangle that is completely in Quadrant II. Name the vertices A, B, and C.

Record the coordinates of each vertex in the chart below.

<i>Coordinates of A</i>	<i>Coordinates of B</i>	<i>Coordinates of C</i>

Draw a new triangle that is translated 5 units to the right and 3 units down. Label the corresponding vertices of the new triangle A', B' and C'. Record their coordinates in the chart below.

<i>Coordinates of A'</i>	<i>Coordinates of B'</i>	<i>Coordinates of C'</i>

Study the change made in the coordinates to find a pattern.

If you started with a polygon that had a vertex $(3,5)$ and you moved it 2 units to the left and 3 units down, what would the coordinates of the new vertex be?

If you started with a polygon that had a vertex (x,y) and you moved it 3 units to the right and 5 units down, what would the coordinates of the new vertex be?
