

9.1 Properties of Translations

Essential Question: How do you describe the properties of orientation and congruence of translations?

Learning Goal: Students will be able to verify experimentally the properties of translations, reflections, and rotations. **MAFS.8.G.1.1, MAFS.8.G.1.1a, MAFS.8.G.1.1b, MAFS.8.G.1.1c, and MAFS.8.G.1.3**

<p>Questions:</p>	<p>Notes:</p> <p>Exploring Translations</p> <p>You learned that a function is a rule that assigns exactly one output to each input. A transformation is a function that describes a change in the position, size, or shape of a figure. The input of a transformation is the preimage, and the output of a transformation is the image.</p> <p>A translation is a transformation that slides a figure along a straight line.</p> <p>Example:</p> <p>The description of a translation in a coordinate plane uses a combination of two translations – one translation slides the figure in a horizontal direction, and the other slides the figure in a vertical direction. An example is shown below.</p> <p>A translation slides a figure 8 <u>units right</u> and 5 <u>units down</u>.</p> <table style="margin-left: auto; margin-right: auto;"><tr><td style="text-align: center;">Horizontal</td><td style="text-align: center;">vertical</td></tr><tr><td style="text-align: center;">Distance</td><td style="text-align: center;">distance</td></tr></table> <p>Triangle LMN is shown in the graph. The triangle can be translated 8 units right and 5 units down as shown below.</p> <p>Step 1 Translate each vertex 8 units right.</p> <p>Step 2 Translate each vertex 5 units down.</p> <p>Step 3 Label the resulting vertices and connect them to form triangle $L'M'N'$.</p>	Horizontal	vertical	Distance	distance
Horizontal	vertical				
Distance	distance				

