

## Unit Plan by Prioritized Standards

<b>Content Area</b>	Geometry
<b>Grade/Course</b>	10
<b>Unit of Study</b>	Transformations in the Coordinate Plane - Unit 1
<b>Duration of Unit</b>	12 days

Insert priority standards below (include code). **CIRCLE or Highlight** the **SKILLS** that students need to be able to do and **UNDERLINE** the **CONCEPTS** that students need to know. (address “supporting” standards in daily lesson plans)

**G.CO.1 Know precise definitions** of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.

**G.CO.2 Represent transformations** in the plane using, transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g. translation vs horizontal stretch).

Skills (what must be able to do)	Concepts (what students need to know)	DOK Level / Bloom's
<ul style="list-style-type: none"> <li>● Know precise definitions</li> <li>● Represent transformations</li> <li>● Describe Transformations</li> <li>● Compare Transformations</li> </ul>	<p><b>*angle, circle, perpendicular line, parallel line, and line segment</b></p> <p><b>*using transparencies and geometry software</b></p> <p><b>*functions that take points in the plane as inputs and give other points as outputs</b></p> <p><b>*preserve distance and angle to those that do not (e.g. translation vs horizontal stretch)</b></p>	<p>1</p> <p>2</p> <p>2</p> <p>3</p>

<p><b>Step 5: Determine BIG Ideas</b> (enduring understandings students will remember long after the unit of study)</p>	<p><b>Step 6: Write Essential Questions</b> (these guide instruction and assessment for all tasks. The big ideas are answers to the essential questions)</p>
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<ul style="list-style-type: none"> <li>● <b>The concepts of congruence, similarity, and symmetry can be understood from the perspective of geometric transformation.</b></li> <li>● <b>The rigid motions: translations, rotations, reflections, and combinations of these, all of which are here assumed to preserve distance and angles (and therefore shapes in general).</b></li> </ul>	<ul style="list-style-type: none"> <li>● What are the undefined terms essential to any study of geometry?</li> <li>● How do you determine the type of transformation that has occurred?</li> <li>● What effects do transformations have on geometric figures?</li> <li>● How do we define and create geometric transformations?</li> <li>● How do transformations of geometric figures and functions compare?</li> </ul>
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- **Reflections and rotations each explain a particular type of symmetry, and the symmetries of an object offer insight into its attributes.**

- How do we know which transformations have created the mapping of an image?
- How do we translate geometric figures in the coordinate plane?
- How do we reflect points in a coordinate plane?
- How are reflections and rotations similar and different?
- How can we describe / represent a transformation (or series of transformations) that take place in the coordinate plane?
- How can the coordinate plane help me understand properties of reflections, translations and rotations?
- What is the relationship between reflections, translations and rotations?

**Essential Unit Vocabulary**

**Angle, circle, perpendicular line, parallel line, line segment, point, line, distance along a line, transformation, rotation, reflection, translation, congruent, image, pre-image, isometry**

**Next step, create assessments and engaging learning experiences**