

Unit 6 | Connecting Algebra and Geometry through Coordinates

Standard Code	Mastery Level	Standard
MCC8.G.8		Use the Pythagorean Theorem to find the distance between two points on a coordinate system.
G.GPE.4		Use coordinate geometry to prove or disprove statements about figures.
		Use coordinate geometry to prove geometric theorems algebraically.
G.GPE.5		Using slope, determine whether two lines are parallel, perpendicular or neither.
		Using slope criteria for parallel and perpendicular lines, find equations of lines in contextual situations.
G.GPE.6		Given two points, find the point on the line segment between the two points that divides the segment into a given ratio.
G.GPE.7		Use coordinate geometry and the distance formula to find the perimeters of polygons and the areas of triangles and rectangles.

Rationale for Unit 6: Students will use the concepts of distance, midpoint, and slope to verify algebraically geometric relationships of figures in the coordinate plane (triangles and quadrilaterals). Students will solve problems involving parallel and perpendicular lines, perimeters and areas of polygons, and the partitioning of a segment in a given ratio.

Pre-requisites:

It is expected that students will have prior knowledge/experience related to the concepts and skills identified below. A pre-assessment will be given to determine if time needs to be spent on conceptual activities that help students develop a deeper understanding of these ideas.

1. approximating radicals
2. calculating slopes of lines
3. graphing lines
4. writing equations for lines