Curriculum Analysis
Geometry

What new content moved into the grade 8 curriculum?	What student expectations in Geometry may be affected by the change in curriculum?
• Generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation. 8(3)(A)	• Apply the definition of similarity, in terms of a dilation, to identify similar figures and their proportional sides and the congruent corresponding angles. G(7)(A) • Prove theorems about similar triangles, including the Triangle Proportionality theorem, and apply these theorems to solve problems. G(8)(A)
• Use similar right triangles to develop an understanding of slope, given as the rate comparing the change in *y*-values to the change in *x*-values $\left(\dfrac{y_2 - y_1}{x_2 - x_1} \right)$. 8(4)(A)	• Derive and use the distance, slope, and midpoint formulas to verify geometric relationships, including congruence of segments and parallelism, or perpendicularity of pairs of lines. G(2)(B)
• Determine the distance between two points on a coordinate plane using the Pythagorean Theorem. 8(7)(D)	• Derive and use the distance, slope, and midpoint formulas to verify geometric relationships. G(2)(B)
• Use informal arguments to establish facts about the angle sum of triangles, exterior angles of triangles, angles created when parallel lines are cut by a transversal, and angle-angle criterion for similarity of triangles. 8(8)(D)	• Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal, criteria required for triangle congruence, special segments of triangles, diagonals of quadrilaterals, interior and exterior angles of polygons, and special segments and angles of circles choosing from a variety of tools. G(5)(A) • Verify theorems about angles formed by the intersection of lines and line segments, including vertical angles, and angles formed by parallel lines cut by a transversal, and prove equidistance between the endpoints of a segment and points on its perpendicular bisector and apply these relationships to solve problems. G(6)(A) • Apply the Angle-Angle criterion to verify similar triangles and apply the proportionality of the corresponding sides to solve problems. G(7)(B)

• Generalize properties of orientation and congruence of transformations, including rotations. 8(10)(A) • Differentiate between those transformations that preserve congruence and those that do not, including rotations. 8(10)(B) • Explain the effect of a transformation of a two-dimensional shape on a coordinate plane using an algebraic representation, **including rotations.** 8(10)(C)	• Describe and perform transformations of figures in a plane using coordinate notation. G(3)(A) • Determine the image or pre-image of a figure under a composition of rigid transformations, a composition of non-rigid transformations, and a composition of both, including dilations where the center can be any point in the plane. G(3)(B) • Identify the sequence of transformations that will carry a given pre-image onto an image on and off the coordinate plane. G(3)(C) • Identify and distinguish between reflectional and rotational symmetry in a plane figure. G(3)(D) • Apply the definition of congruence, in terms of rigid transformations, to identify congruent figures and their corresponding sides and angles. G(6)(C)
• Write the equation of a line that contains a given point and is parallel to a given line. A(2)(E) • Write the equation of a line that contains a given point and is perpendicular to a given line. A(2)(F) • Write an equation of a line that is parallel or perpendicular to the X or Y axis, and determine whether the slope of the line is zero or undefined. A(2)(G)	• Derive and use the distance, slope, and midpoint formulas to verify geometric relationships, including congruence of segments and parallelism or perpendicularity of pairs of lines. G(2)(B) • Determine an equation of a line parallel or perpendicular to a given line that passes through a given point. G(2)(C)