Learning Progression for Geometric Constructions

Content from Elementary Grades	Content from Middle School Grades	Geometry
5.13 Using plane figures (square, rectangle, triangle, parallelogram, rhombus, and trapezoid), will a) develop definitions of these plane figures; 4.10 a) ID and describe representations of points, lines, line segments, rays, and angles, including endpoints and vertices; and b) ID representations of lines that illustrate intersection, parallelism, and perpendicularity.	6.13 The student will describe and identify properties of quadrilaterals.	G.2 Use the relationships between angles formed by two lines cut by a transversal to a) determine whether two lines are parallel; b) verify the parallelism, using algebraic and coordinate methods as well as deductive proofs; and c) solve real-world problems involving angles formed when parallel lines are cut by a transversal.
5.13 Develop definitions of plane figures (triangles and quadrilaterals) 4.10a) ID and describe representations of points, lines, line segments, rays, and angles 3.15 ID and draw points, line segments, rays, angles and lines	8.6a) Verify and describe the relationships among vertical, adjacent, supplementary and complementary angles 7.7 Compare and contrast quads based on properties 7.6 Determine similarity of plane figures and write proportions to express relationships between similar quads and triangles 6.13 ID/describe properties of quadrilaterals 6.12 Determine congruence of segments/angles/polygons	G.4 Construct and justify the constructions of a) a line segment congruent to a given line segment; b) the perpendicular bisector of a line segment; c) a perpendicular to a given line from a point not on the line; d) a perpendicular to a given line at a given point on the line; e) the bisector of a given angle, f) an angle congruent to a given angle; and g) a line parallel to a given line through a point not on the given line.
5.13 Develop definitions of plane figures (triangles and quadrilaterals) 5.12a) Classify angles as right, acute, obtuse, or straight and b) classify triangles as right, acute, obtuse, equilateral, scalene, or isosceles. 5.11 Measure right, acute, obtuse, and straight angles. 4.12 Define polygon and ID polygons with 10 or fewer sides	8.6a) Verify and describe the relationships among vertical, adjacent, supplementary and complementary angles 7.6 Determine similarity of plane figures and write proportions to express relationships between similar quads and triangles 6.12 Determine congruence of segments/angles/polygons	G.5 a) Order the sides by length, given the angle measures; b) order the angles by degree measure, given the side lengths; c) determine whether a triangle exists; and d) determine the range in which the length of the third side must lie.
5.13 Develop definitions of plane figures (triangles and quadrilaterals) 5.12a) Classify angles as right, acute, obtuse, or straight and b) classify triangles as right, acute, obtuse, equilateral, scalene, or isosceles. 4.12 Define polygon and ID polygons with 10 or fewer sides 3.16 ID and describe congruent and noncongruent plane figures.	8.6a) Verify and describe the relationships among vertical, adjacent, supplementary and complementary angles 7.6 Determine similarity of plane figures and write proportions to express relationships between similar quads and triangles 6.12 Determine congruence of segments/angles/polygons	G.6 Prove two triangles are congruent, using algebraic and coordinate methods as well as deductive proofs.

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5.13 Develop definitions of plane figures (triangles and quadrilaterals) 5.12a) Classify angles as right, acute, obtuse, or straight and b) classify triangles as right, acute, obtuse, equilateral, scalene, or isosceles. 4.12 Define polygon and ID polygons with 10 or fewer sides 3.16 ID and describe congruent and noncongruent plane figures.	8.6a) Verify and describe the relationships among vertical, adjacent, supplementary and complementary angles 7.6 Determine similarity of plane figures and write proportions to express relationships between similar quads and triangles 6.12 Determine congruence of segments/angles/polygons	G.7 Prove two triangles are similar, using algebraic and coordinate methods as well as deductive proofs.
5.13 Develop definitions of plane figures (triangles and quadrilaterals) 5.12a) Classify angles as right, acute, obtuse, or straight and b) classify triangles as right, acute, obtuse, equilateral, scalene, or isosceles.	8.10 a) Verify the Pythagorean Theorem; b) apply the Pythagorean Theorem 7.6 Determine similarity of plane figures and write proportions to express relationships between similar quads and triangles	G.8 Solve real-world problems involving right triangles by using the Pythagorean Theorem and its converse, properties of special right triangles, and right triangle trigonometry.
5.13 Develop definitions of plane figures (triangles and quadrilaterals) 4.12 Define polygon and ID polygons with 10 or fewer sides 3.14 ID, describe, compare, and contrast characteristics of plane and solid geometric figures	8.6a) Verify and describe the relationships among vertical, adjacent, supplementary and complementary angles 7.7 Compare/contrast quadrilaterals based on properties 7.6 Determine similarity of plane figures and write proportions to express relationships between similar quads and triangles 6.13 ID/describe properties of quadrilaterals	G.9 Verify characteristics of quadrilaterals and use properties of quadrilaterals to solve real-world problems.
5.9 ID and describe the diameter, radius, chord, and circumference of a circle. 3.14 ID, describe, compare, and contrast characteristics of plane and solid geometric figures (including circles)	8.15 Solve multistep linear equations 8.6a) Verify and describe the relationships among vertical, adjacent, supplementary and complementary angles 6.10b) Solve practical problems involving circumference and area of a circle	G.11 Use angles, arcs, chords, tangents, and secants to a) investigate, verify, and apply properties of circles; b) solve real-world problems involving properties of circles,