Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
	The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
Congruence				
G.G-CO.A.1	Identify 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.	Informally define 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.	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.	Create 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.G-CO.A.2	Identify transformations in the plane as functions that take points in the plane as inputs and give other points as outputs.	Interpret transformations in the plane as functions that take points in the plane as inputs and give other points as outputs. Identify transformations that preserve distance and angle to those that do not.	Represent and describe transformations in the plane 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.	Create and rewrite transformations in the plane as functions that take points in the plane as inputs and give other points as outputs. Evaluate and compare transformations that preserve distance and angle to those that do not.
G.G-CO.A.3	Given a rectangle, parallelogram, trapezoid, or regular polygon, identify a rotation or reflection that could carry it onto itself.	Given a rectangle, parallelogram, trapezoid, or regular polygon, identify the rotations and reflections that carry it onto itself.	Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.	Given a rectangle, parallelogram, trapezoid, or regular polygon, create and justify the rotations and reflections that carry it onto itself.
G.G-CO.A.4	Identify definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	Interpret definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	Create and evaluate definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.
G.G-CO.A.5	Given a geometric figure and a rotation, reflection, or translation, identify the transformed figure.	Given a geometric figure and a rotation, reflection, or translation, describe the transformed figure. Identify a sequence of transformations that will carry a given figure onto another.	Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure. Specify a sequence of transformations that will carry a given figure onto another.	Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure. Specify sequences of transformations that will carry a given figure onto another.
G.G-CO.B.6	Use geometric definitions of rigid motions to transform a figure; given two figures, use the definition of congruence in terms of rigid motions to identify if they are congruent.	Use geometric definitions of rigid motions to transform a figure or to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to identify if they are congruent.	Use geometric definitions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.	Use geometric definitions of rigid motions to transform figures and to predict and describe the effect of a sequence of rigid motions on a given figure; given two figures, use the definition of congruence in terms of rigid motions to describe if and why they are congruent.
G.G-CO.B.7	Use the definition of congruence in terms of rigid motions to understand that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	Use the definition of congruence in terms of rigid motions to identify that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	Use the definition of congruence in terms of rigid motions to justify that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.

G.G-CO.B.8	Understand how the criteria for triangle congruence (ASA, AAS, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.	Show how the criteria for triangle congruence (ASA, AAS, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.	Explain how the criteria for triangle congruence (ASA, AAS, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.	Justify how the criteria for triangle congruence (ASA, AAS, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.
G.G-CO.C.9	Identify theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.	Interpret theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.	Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.	Construct and evaluate proofs for theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.
G.G-CO.C.10	Identify theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of an isosceles triangle are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.	Interpret theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of an isosceles triangle are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.	Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of an isosceles triangle are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.	Construct and evaluate proofs for theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of an isosceles triangle are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.
G.G-CO.C.11	Identify theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and rectangles are parallelograms with congruent diagonals.	Interpret theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and rectangles are parallelograms with congruent diagonals.	Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and rectangles are parallelograms with congruent diagonals.	Construct and evaluate proofs for theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and rectangles are parallelograms with congruent diagonals.
G.G-CO.D.12	Identify formal geometric constructions with a variety of tools and methods. Constructions include: copying segments; copying angles; bisecting segments; bisecting angles; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.	Complete formal geometric constructions with a variety of tools and methods. Constructions include: copying segments; copying angles; bisecting segments; bisecting angles; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.	Make formal geometric constructions with a variety of tools and methods. Constructions include: copying segments; copying angles; bisecting segments; bisecting angles; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.	Critique formal geometric constructions with a variety of tools and methods. Constructions include: copying segments; copying angles; bisecting segments; bisecting angles; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.
G.G-CO.D.13	Identify steps needed to construct an equilateral triangle, a square, or a regular hexagon inscribed in a circle.	Identify steps needed to construct an equilateral triangle, a square, or a regular hexagon inscribed in a circle with a variety of tools and methods.	Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle with a variety of tools and methods.	Make observations about a constructed equilateral triangle, square, and regular hexagon inscribed in a circle with a variety of tools and methods.

Similarity, Right Triangles and Trigonometry				
G.G-SRT.A.1	Identify the properties of dilations given by a center and a scale factor: a. Dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.	Interpret examples demonstrating the properties of dilations given by a center and a scale factor: a. Dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.	Verify experimentally the properties of dilations given by a center and a scale factor: a. Dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.	Explain quantitatively the properties of dilations given by a center and a scale factor: a. Dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.
G.G-SRT.A.2	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; identify the meaning of similarity for triangles as the equality of all corresponding pairs of angles or the proportionality of all corresponding pairs of sides.	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; qualitatively describe the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; make observations using similarity transformations on the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.
G.G-SRT.A.3	Use the properties of similarity transformations to identify the AA, SAS, and SSS criterion for two triangles to be similar.	Use the properties of similarity transformations to interpret the AA, SAS, and SSS criterion for two triangles to be similar.	Use the properties of similarity transformations to establish the AA, SAS, and SSS criterion for two triangles to be similar.	Use the properties of similarity transformations to develop definitions for the AA, SAS, and SSS criterion for two triangles to be similar.
G.G-SRT.B.4	Identify theorems about triangles. Theorems include: an interior line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.	Interpret theorems about triangles. Theorems include: an interior line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.	Prove theorems about triangles. Theorems include: an interior line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.	Construct and evaluate proofs of theorems about triangles. Theorems include: an interior line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.
G.G-SRT.B.5	Use congruence and similarity criteria to interpret problems.	Use congruence and similarity criteria to identify relationships in geometric figures and solve problems utilizing real-world context.	Use congruence and similarity criteria to prove relationships in geometric figures and solve problems utilizing real-world context.	Use congruence and similarity criteria to construct and evaluate proofs for relationships in geometric figures and solve complex problems utilizing real-world context.
G.G-SRT.C.6	Identify that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.	Specify that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.	Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.	Explain that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.

G.G-SRT.C.7	Identify the relationship between the sine and cosine of complementary angles.	Interpret and use the relationship between the sine and cosine of complementary angles.	Explain and use the relationship between the sine and cosine of complementary angles.	Prove the relationship between the sine and cosine of complementary angles.
G.G-SRT.C.8	Use trigonometric ratios and the Pythagorean Theorem to identify unknown measurements in right triangles.	Use trigonometric ratios (including inverse trigonometric ratios) and the Pythagorean Theorem to find unknown measurements in right triangles.	Use trigonometric ratios (including inverse trigonometric ratios) and the Pythagorean Theorem to find unknown measurements in right triangles utilizing real-world context.	Use trigonometric ratios (including inverse trigonometric ratios) and the Pythagorean Theorem to describe a solution process to find unknown measurements in right triangles utilizing real-world context.

Circles				
G.G-C.A.1	Recognize that all circles are similar.	Explain qualitatively that all circles are similar.	Prove that all circles are similar.	Construct and evaluate proofs that all circles are similar.
G.G-C.A.2	Use relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.	Find relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.	Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.	Prove relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.
G.G-C.A.3	Identify inscribed and circumscribed circles of a triangle.	Construct the inscribed and circumscribed circles of a triangle, and use properties of angles for a quadrilateral inscribed in a circle.	Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.	Evaluate constructions of inscribed and circumscribed circles of a triangle, and prove unique relationships between the angles for a quadrilateral inscribed in a circle.
G.G-C.B.5	Identify that the length of the arc intercepted by an angle is proportional to the radius and that the radian measure of the angle is the constant of proportionality; define the formula for the area of a sector. Identify the relationship between degrees and radians.	Solves problems using the fact that the length of the arc intercepted by an angle is proportional to the radius and that the radian measure of the angle is the constant of proportionality; solve problems using the formula for the area of a sector. Convert between degrees and radians.	Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector. Convert between degrees and radians.	Prove using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; prove the formula for the area of a sector. Derive the formula to convert between degrees and radians.

Geometric Properties with Equations				
G.G-GPE.A.1	Identify the center and radius of a circle given by an equation of the form $(x - h)^2 + (y - k)^2 = r^2$.	Create the equation of a circle of given center and radius; find the center and radius of a circle given by an equation of the form $(x - h)^2 + (y - k)^2 = r^2$.	Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.	Explain the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.
G.G-GPE.B.4	Use coordinates to identify geometric relationships. Relationships include: proving or disproving geometric figures given specific points in the coordinate plane; and proving or disproving if a specific point lies on a given circle.	Use coordinates to algebraically solve problems involving geometric relationships. Relationships include: proving or disproving geometric figures given specific points in the coordinate plane; and proving or disproving if a specific point lies on a given circle.	Use coordinates to algebraically prove or disprove geometric relationships. Relationships include: proving or disproving geometric figures given specific points in the coordinate plane; and proving or disproving if a specific point lies on a given circle.	Use coordinates to algebraically justify statements about geometric relationships. Relationships include: proving or disproving geometric figures given specific points in the coordinate plane; and proving or disproving if a specific point lies on a given circle.
G.G-GPE.B.5	Use the slope criteria for parallel or perpendicular lines to solve simple geometric problems, including finding the equation of a line parallel or perpendicular to a given line.	Use the slope criteria for parallel and perpendicular lines to solve simple geometric problems, including finding the equation of a line parallel or perpendicular to a given line that passes through a given point.	Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems, including finding the equation of a line parallel or perpendicular to a given line that passes through a given point.	Prove and explain the slope criteria for parallel and perpendicular lines and use them to solve geometric problems, including finding the equation of a line parallel or perpendicular to a given line that passes through a given point.
G.G-GPE.B.6	Identify the point on a directed horizontal or vertical line segment between two given points that partitions the segment in a given ratio, given visual representation.	Identify the point on a directed line segment between two given points that partitions the segment in a given ratio, given visual representation.	Find the point on a directed line segment between two given points that partitions the segment in a given ratio.	Construct a line segment that partitions the segment in a given ratio.
G.G-GPE.B.7	Use coordinates to compute perimeters and areas of right triangles and rectangles.	Use coordinates to compute perimeters of regular polygons and areas of right triangles and rectangles.	Use coordinates to compute perimeters of polygons and areas of triangles and rectangles.	Use coordinates to justify perimeters of polygons and areas of triangles and rectangles.

Geometric Measurement and Dimension				
G-GMD.A.1	Identify the formulas for the volume of a cylinder, pyramid, and cone.	Informally describe the formulas for the volume of a cylinder, pyramid, and cone.	Analyze and verify the formulas for the volume of a cylinder, pyramid, and cone.	Create and interpret the relationships between the formulas for the volume of a cylinder, pyramid, and cone.
G-GMD.A.3	Substitute given measures into volume formulas for cylinders, pyramids, cones, and spheres to solve simple problems.	Use volume formulas for cylinders, pyramids, cones, and spheres to solve simple problems.	Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems utilizing real-world context.	Compare volume formulas for cylinders, pyramids, cones, and spheres.
G-GMD.B.4	Identify the shapes of two-dimensional horizontal or vertical cross-sections of three-dimensional objects.	Identify three-dimensional objects generated by rotations of two-dimensional objects about a line of symmetry.	Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.	Describe or create the shapes of two-dimensional cross-sections of three-dimensional objects, and describe three-dimensional objects generated by rotations of two-dimensional objects.

Modeling with Geometry				
G.G-MG.A.1	Use simple geometric shapes to qualitatively describe objects utilizing real-world context.	Use geometric shapes and their properties to qualitatively describe objects utilizing real-world context.	Use geometric shapes, their measures, and their properties to describe objects utilizing real-world context.	Use geometric shapes, their measures, and their properties to model complex objects utilizing real-world context.
G.G-MG.A.2	Calculate density based on area and volume.	Calculate density based on area and volume in modeling situations utilizing real-world context.	Apply concepts of density based on area and volume in modeling situations utilizing real-world context.	Apply concepts of density based on area and volume in comparative modeling situations utilizing real-world context.
G.G-MG.A.3	Identify relevant geometric models to solve design problems utilizing real-world context.	Apply geometric methods to identify solutions for design problems utilizing real-world context.	Apply geometric methods to solve design problems utilizing real-world context.	Apply geometric methods to create composite structures as solutions for design problems utilizing real-world context.