Instructional Weeks	Standards	Student-Friendly Learning Targets	Success Criteria	Content Vocabulary
Unit 1 – Points, Lines, and Planes	• G.1-Know and apply precise definitions of the language of Geometry ○ A. Understand properties of line segments, angles, and circles. ○ B. Understand properties of and differences between perpendicular and parallel lines.	• I can identify and model plane figures, including collinear and non-collinear points. • G.1.A: I can identify and model lines, segments, rays, and angles using appropriate mathematical symbols. • G.1.B: I can use various methods to prove that two lines are parallel or perpendicular. • I can apply properties and theorems of parallel and perpendicular lines to solve problems		
Unit 2 – Angle Relationships	• G.6-Apply theorems for lines, angles, triangles, parallelograms.	● I can identify vertical, adjacent, complementary, and supplementary angle pairs and use them to solve problems ● I can identify medians, altitudes, perpendicular bisectors, and angle bisectors of triangles and use their properties to solve problems (focus on angle bisectors) ● I can identify corresponding, same-side interior, same-side exterior, alternate interior, and alternate exterior angle pairs formed by a pair of parallel lines and a transversal and use these special angle pairs to solve problems. ● I can identify and classify regular and		

		non-regular polygons based on number of sides, the angle measures, and the side lengths. ● I can apply the angle sum theorem for triangles and polygons to find the interior and exterior angle measures given the number of sides, to find the number of sides given the angle, and to solve real-world problems. ● I can identify and classify triangles by their sides and angles ● I can apply the isosceles triangle theorem and its converse to solve mathematical and real-world problems ● I can apply the triangle inequality theorem to determine if a triangle exists and the order of sides and angles. ● I can identify and classify quadrilaterals, including parallelograms, rectangles, rhombi, squares, kites, trapezoids, and isosceles trapezoids, using their properties.		
Unit 3 – Triangle Fundamentals	● G.6-Apply theorems for lines, angles, triangles, parallelograms. ● G.11-Understand theorems about triangles. ○ A. Apply theorems about triangles ○ B. Prove theorems about triangles	• I can apply the angle sum theorem for triangles and polygons to find the interior and exterior angle measures given the number of sides, to find the number of sides given the angle, and to solve real-world problems. • I can identify and classify triangles by their sides and		

		angles • I can apply the isosceles triangle theorem and its converse to solve mathematical and real-world problems • I can apply the triangle inequality theorem to determine if a triangle exists and the order of sides and angles.		
Unit 4 – Trans-formations	● G.2-Representing transformations in the plane. ○ A. Describe transformations as functions that take points in the plane as inputs and give other points as outputs. ○ B. Compare transformations that preserve distance and angle measures to those that do not. ○ C. Given a rectangle, parallelogram trapezoid, or regular polygon formally describe the rotations and reflections that carry it onto itself, using properties of these figures. ● G.4-Understand the effects of transformations of geometric figures. ○ A. Given a geometric	• I can determine the effect of reflections, rotations, translations, and dilations and their compositions on the coordinate plane. • I can determine points or lines of symmetry and apply the properties of symmetry to figures. • I can use coordinate geometry to solve problems about geometric figures • I can identify and draw images of transformations and use their properties to solve problems		

	figure and a rotation, reflection, or translation, draw the transformed figure. ○ B. Specify a sequence of transformations that will carry a given figure onto another. ● G.9-Understand the properties of dilations. ○ A. Verify the properties that result from that dilation given by a center and a scale factor. ○ B. Verify that a dilation produces an image that is similar to the pre-image. • G.15-Verify using dilations that all circles are similar.			
Unit 5 – Congruent Triangles	● G.4.c-Understand the effects of transformations of geometric figures. Use geometric descriptions 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. ● G.5-Know and apply the concepts of triangle congruence:	• I can prove that two triangles are congruent by applying the SSS, SAS, ASA, AAS, and HL congruence statements. • I can use the principle that corresponding parts of congruent triangles are congruent to solve problems.		

	○ A. 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. B. Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.			
Unit 6 – Similar Triangles	● G.10-Apply the properties of similarity transformations to establish the AA criterion for two triangles to be similar. ● G.11-Understand theorems about triangles. ○ A. Apply theorems about triangles ○ C. Use similarity criteria for triangles to solve problems and to prove relationships in geometric figures. ● G.12-Understand properties of right triangles ○ A.-Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trig ratios for acute angles (sine, cosine, and	• I can identify similar figures and use ratios and proportions to solve mathematical and real-world problems (finding the height of a tree using the shadow of the tree and the height and shadow of a person) • I Can use the definition of similarity to establish the congruence of angles, proportionality of sides, and scale factor of two similar polygons • I can use several methods, including AA, SAS, and SSS, to prove that two triangles are similar, corresponding sides are proportional and corresponding angles are congruent		

	tangent). • G.29-Use geometric shapes, their measures and their properties to describe objects in the real world settings.			
Unit 7 – Right Triangles	• G.11-Understand theorems about triangles. ○ A. Apply theorems about triangles ○ C. Use similarity criteria for triangles to solve problems and to prove relationships in geometric figures. • G.12-Understand properties of right triangles ○ A.-Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trig ratios for acute angles (sine, cosine, and tangent). ○ B.-Explain and use the relationship between the sine and cosine of complementary angles. ○ C-use trig ratios and the Pythagorean theorem to solve right triangles in applied problems • G.29-Use geometric shapes, their measures and their	• I can apply the Pythagorean theorem and its converse to triangles to solve mathematical and real-world problems • I can identify medians, altitudes, perpendicular bisectors, and angle bisectors of triangles and use their properties to solve problems (focus on perpendicular bisectors and altitudes) • I can solve problems involving the relationships formed when the altitude to the hypotenuse of a right triangle is drawn. • I can apply properties of 45-45-90 and 30-60-90 triangles to determine lengths of sides of triangles • I can find the sine, cosine and tangent ratios of acute angles given the side lengths of right triangles. • I can use trigonometric ratios to find the sides or angles of right triangles and to solve real-world problems (use angle of elevation and depression to find measures)		

	properties to describe objects in the real world settings.			

Unit 8 - Polygons	• G.6-Apply theorems for lines, angles, triangles, **parallelograms.**
	• G.21-Use coordinates to justify and prove simple geometric theorems algebraically.
	• G.22-Justfy and apply the slope criteria for parallel and perpendicular lines and use them to solve geometric problems.
	• G.23-Find measurements among points within the coordinate plane.
	  ○ A. Use points from the coordinate plane to find the coordinates of a midpoint of a line segment and the distance between the endpoints of a line segment.
	  ○ B. Find the point in a directed line segment between two given points that partitions the segment in a given ratio.
	• G.29-Use geometric shapes, their measures and their properties to describe objects in the real world settings.
		• I can find the perimeter and area of common plane figures, including triangles, quadrilaterals, regular polygons, and irregular figures, from given information using appropriate units of measure
		• I can manipulate perimeter and area formulas to solve problems (find missing length)
		• I can apply relationships between perimeters of similar figures, areas of similar figures, and volumes of similar figures, in terms of scale factor, to solve mathematical and real-world problems.
		• I can use area to solve problems involving geometry probability		

Unit 9 –	• G.24-Use coordinates within the	• I can identify and classify		

Surface Area and Volume	coordinate plane to calculate measurements of two dimensional figures. ○ A. Compute the perimeters of various polygons. ○ B. Compute the areas of triangles, rectangles and other quadrilaterals. ● G.25-Analyze and determine the validity of arguments for the formulas for the various figures and shapes. ○ A. Finding the circumference and area of a circle ○ B. Finding the volume of a sphere, prism, cylinder, pyramid, and cone. ● G.27-Use volume formulas to solve problems for cylinders, pyramids, cones, spheres, prisms. ● G.26-Give an informal argument using Calvlieri's principle for the formulas for the volume of a sphere and other solid figures. ● G.28-Identify the shapes of two-dimensional cross-sections of three-dimensional objects and identify three dimensional objects generated by rotations and two-dimensional objects. ● G.29-Use geometric shapes, their measures and their	prisms, pyramids, cylinders, cones, and spheres and use their properties to solve problems. • I can describe and draw cross sections of prisms, cylinders, pyramids, and cones. • I can find the lateral area, surface area, and volume of prisms, cylinders, cones, and pyramids in mathematical and real-world settings. • I can use cross sections of prisms, cylinders, pyramids, and cones to solve volume problems. • I can find the lateral area, surface area, and volume of prisms, cylinders, cones, and pyramids in mathematical and real-world settings. • I can use cross sections of prisms, cylinders, pyramids, and cones to solve volume problems. • I can find the surface area and volume of a sphere in mathematical and real-world settings. • I can apply relationships between perimeters of similar figures, areas of similar figures, and volumes of similar figures, in terms of scale factor, to solve mathematical and real-world		

	properties to describe objects in the real world settings. • G.30-Apply concepts of density based on area and volume in modeling situations, using appropriate units of measurements.	problems.		
Unit 10 - Circles	• G.16-Identify and describe relationships among angles and segments within the context of circles involving ○ A. Recognize differences between and properties of inscribed, central and circumscribed angles. ○ B. Understand relationships between inscribed angles and the diameter of a circle. ○ C. Understand the relationship between the radius of a circle and the line drawn through the point of tangency on that radius. ● G.17-Apply basic construction procedures within the context of a circle. ○ A. Construct the inscribed and circumscribed circles of a triangle ○ B. Construct a tangent line from a point outside a given circle to	• I can find segment lengths, angle measures, and intercepted arc measures formed by chords, secants, and tangents intersecting inside and outside circles. • I can find arc lengths and circumferences of circles from given information (radius, diameter, coordinates). • I can determine the measure of central and inscribed angles and their intercepted arcs. • I can find the area of a circle and the area of a sector of a circle from given information (radius, diameter, coordinates). • I can write equations for circles in standard form and solve problems using equations and graphs. • I can find arc lengths and circumferences of circles from given information (radius, diameter, coordinates) Focus only on circumference • I can find the area of a circle and the area of a sector of a circle		

	the circle. • G.18-Understand the relationship between an intercepted arc length within a circle and the radius of the circle ○ B-Define the radian measure of the angle as the measure of a central angle that intercepts an arc equal in length to the radius of the circle. • G.19a-Understnad the relationship between the algebraic form and the geometric representation of a circle. Write the equation of a circle of given center and radius using the pythagorean theorem.	from given information (radius, diameter, coordinates) Focus only on area of the circle		