Geometry Scope and Sequence

Duration Fall	**Duration Spring**	**Unit**	**Pacing**	**Power Standards**	**Resources**	**Assessments** Assessments are shared in common among teachers
September	January/ February	Unit 1: Lines and Angles, Proof	2 Weeks	G-CO.1 **G-CO.9** **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.*** **G-CO.12** **Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).** ***Copying a segment; copying an angle; bisecting a segment; bisecting an angle; 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.***	Textbook Supplemental	Quiz Unit Test
September / October	February/ March	Unit 2: Triangle Properties, Transformations, Symmetry, Congruence	4 weeks	G-CO.2 G-CO.3 G-CO.4 **G.CO.5** **Given a geometric figure and a rotation, reflection, or translation, draw the**	Textbook LTF Supplemental	Quiz Unit Test

				transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another. **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-CO.7** **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.** G-CO.8 G-CO.9 G-CO.10		
October/ November	March/ April (move to Unit 5 next)	Unit 3: Dilation and Similarity, Pythagorean Theorem, Trigonometry	4 weeks	G-SRT.1 **G-SRT.2** **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.** G-SRT.3	Textbook LTF NCTM Illuminations	Quiz Unit Test

				G-SRT.4 **Prove theorems about triangles.** ***Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.*** G-SRT.5 **G-SRT.6** **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.** G-SRT.7 G-SRT.8		
November	May	Unit 4: Polygons and Quadrilaterals, Coordinate Geometry	2 weeks	**G-CO.11** **Prove theorems about parallelograms.** ***Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.*** G-CO.MA.11.a G-C.MA.3.a **G-GPE.4** **Use coordinates to prove simple geometric theorems algebraically.** ***For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1,) lies on the circle centered at the origin and containing the point (0, 2).***	Textbook Supplemental	Quiz Unit Test

				G-GPE.5 **Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).** G-GPE.6 G-GPE.7		
December/ January	April/May (move to Unit 4 next)	Unit 5: Area, Surface Area, Geometry in 3 Dimensions	3 weeks	**G-GMD.1** **Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. *Use dissection arguments, Cavalieri's principle, and informal limit arguments.*** G-GMD.3 **G-GMD.4** **Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.** G-MG.1 G-MG.2 G-MG.3 G-MG.MA.4	Textbook LTF Supplemental	Quiz Unit Test
January	June	Unit 6: Circles With and Without Coordinates, Conic Sections	1 week	G-CO.1 G-GC.1 G-GC.2 **G-GC.5** **Derive using similarity the fact that the**	Textbook	Quiz Unit Test

				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. **G-GPE.1** **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.** **G-GPE.2** **Derive the equation of a parabola given a focus and a directrix.** G-GPE.4		
January	June	Unit 7: Probability	1 Week	S-CP.1 **S-CP.2** **Understand that two events *A* and *B* are independent if the probability of *A* and *B* occurring together is the product of their probabilities, and use this characterization to determine if they are independent. ⋆** **S-CP.3** **Understand the conditional probability of *A* given *B* as *P*(*A* and *B*)/*P*(*B*), and interpret independence of *A* and *B* as saying that the conditional probability of *A* given *B* is the same as the probability of *A*, and the conditional probability of *B* given *A* is the same as the probability of *B*. ⋆** S-CP.4 S-CP.5	Textbook LTF	Quiz Unit Test

				S-CP.6 **Find the conditional probability of *A* given *B* as the fraction of *B*'s outcomes that also belong to *A*, and interpret the answer in terms of the model. ⋆** S-CP.7		