GRADE and SUBJECT

10th Grade Geometry Curriculum **eMath Instruction**

Time/Month	Standard(s)	Content	Skills
September (week 1) - September (week 4) 13 Days	G - CO.1 G - CO.12	Unit 1: Essential Geometric Terms and Concepts	- Define and identify points, segments, lines, rays, circles, arcs, and angles - Identify acute, obtuse, and right angles - Apply relationships of complementary and supplementary angles to solve problems - Construct a triangle with a compass and straightedge, given its sides - Use properties of lines to solve problems
September (week 4) - October (week 3) 13 Days	G - CO.2 G - CO.4 G - CO.5 G - CO.9 G - CO.10 G - CO.6 G - CO.7 G - CO.8 G - CO.3	Unit 2: Transformations, Rigid Motions, and Congruence	- Describe transformations as functions - Define rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments - Draw a transformed figure, given the transformation and preimage - Describe a sequence of transformations that carries a given figure onto another - Prove theorems about lines, angles, and triangles - Use geometric descriptions of rigid motions to explain if two figures are congruent - Explain how the criteria for the triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions
October (week 3) - November (week 3) 21 Days	G - CO.9 G - CO.10	Unit 3: Euclidean Triangle Proof	- Drawing inferences from given - Identify the axioms of equality - Describe the Triangle Congruence Theorems - Prove two triangles are congruent based on given information and images - Prove corresponding sides or angles are congruent in two given triangles

November (week 3) - December (week 2)
 	
16 Days
	G - CO.12
	G - C.3
	G - CO.13
		Unit 4: Constructions	- Construct the following using a compass and straightedge:
			  - Angles
			  - Parallel and Perpendicular lines
			  - Circumscribed and inscribed circles of triangles
			  - Angle and segment bisector
			  - Equilateral triangle, regular hexagon, and square inscribed in a circle

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December (week 2) - January (week 3) 15 Days	G - GPE.4 G - GPE.5 G - SRT.8 G - CO.5	Unit 5: The Tools of Coordinate Geometry	- Describe slopes of parallel and perpendicular lines - Write the equation of a given line, in slope-intercept and point-slope form - Use the Pythagorean Theorem to find the missing side of a right triangle - Use the distance formula to find the distance between two points - Find the midpoint of a given line segment, given the endpoints - Determine the image point of a given point and the rotation, reflection, and/or translation
January (week 3) - January (week 5) 12 Days	G - CO.11 G - CO.10	Unit 6: Quadrilaterals	- Identify the properties of trapezoids, parallelograms, rectangles, rhombii, and squares - Use properties of quadrilaterals to prove theorems about triangles - Prove theorems about parallelograms - Apply properties of quadrilaterals to solve for missing values
February (week 1) - March (week 1) 16 Days	G - SRT.1 G - SRT.2 G - SRT.3 G - SRT.5 G - SRT.4 G - GPE.6 G - CO.10	Unit 7: Dilations and Similarity	- Explain how a dilation changes a figure's sides and angles - Determine the image of a coordinate point, given the dilation - Describe the relationship between similar figures - Identify the similarity criteria (AA, SAS, SSS) - Prove triangles similar - Use the Side Splitter Theorem to find missing values - Find the point that partitions a line segment into the given ratio - Use the relationship of the medians of a triangle to find missing values - Apply properties of similarity to find unknown side lengths of right triangles - Prove the Pythagorean Theorem
March (week 1) - March (week 3) 11 Days	G - SRT.6 G - SRT.7 G - SRT.8	Unit 8: Right Triangle Trigonometry	- Use properties of similarity and the side ratios of right triangles to determine the definitions of sine, cosine, and tangent - Calculate $sin\theta, cos\theta, and\ tan\theta$ when given the angle measure - Use the trig ratios to solve for the missing side or angle of a right triangle - Apply trig ratios to real world situations

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March (week 3) - April (week 4) 21 Days	G - C.2 G - GPE.1 G - CO.12 G - GPE.5	Unit 9: Circle Geometry	- Define and identify terms associated with circles: radius, diameter, center, circle, chords, tangents, secants - Identify inscribed angles - Describe the relationship among inscribed angles and the intercepted arcs - Use the relationship between intersecting chords, tangents, and secants to find an unknown length or angle measure - Prove relationships among secant and tangent lengths - Derive the equation of a circle given the radius and center - Find the radius and center of a circle from an equation by completing the square - Construct lines tangent to a circle with a compass and straightedge - Write the equation of a line tangent to a circle, given the slope of the radius it intersects
April (week 5) - May (week 3) 15 days	G - GPE.7 G - MG.2 G - MG.3 G - GMD.1 G - MG.1 G - C.5 G - C.1 G - GMD.4 G - GMD.3	Unit 10: Measurement and Modeling	- Find the perimeter of a given figure - Calculate the circumference and area of a circle - Calculate the area of any polygon - Determine the area of a sector in a given circle - Use radian measure to represent angles - Identify the cross sections of a given solid - Use the correct formula to find the volume of the following shapes: prisms, cylinders, pyramids, cones, spheres - Find the volume of a truncated cone by incorporating similarity - Apply volume to model real-world situations
May (week 4) - June (week 3)		Regents Review	