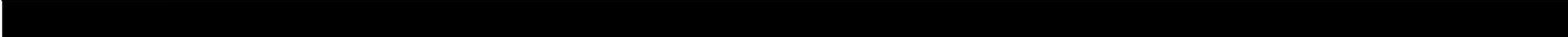


**CURRICULUM  
MAP**

<b>School For Excellence</b>	<b>Course:</b> GEOMETRY (Common Core) <b>Name(s):</b> OWUSU 11&12 <sup>th</sup> grade
	<b>SEPTEMBER</b>
<b>Essential Questions:</b>	How does slope contribute to the relationship expressed by a linear equation?
<b>Focus/Unit:</b>	Basics of Geometry
<b>Content</b>	Segments and Angles, Line segment and intersecting lines, vertical angles, distance formula, mid-point formula
<b>Common Core Standards</b>	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 (G-CO.1).
<b>Ongoing Formative Assessments:</b>	Quizzes + Chapter Tests + Exit Slip + Unit Packet+ class project
<b>Summative Assessment:</b>	End of Unit Exam & State Assessment (NY Regents)
<b>Skills Necessary For Performance Tasks</b>	1.1 Segments and Angles (G.G.35, G.CO) 1.2 Line segment and intersecting lines Vertical angles  1.3 Parallel lines and transversals, corresponding angles, alternate interior angles, alternate exterior angles, same side interior angles, angles in a triangle, sum of interior angles of a Triangle is 180 degrees, exterior angles equals two opposite interior angles in a triangle, inequalities in triangles, sum of the two short sides must be greater than the longest side of the triangle (G-CO.9)  1.4 Parallel Lines and Transversals (G.G.35) Corresponding angles, alternate interior angles, alternate exterior angles, same side interior angles.

What specific literacy strategies will be used?	Exit Slip, Vocabulary Words, Explaining Formulas, Math Autobiography (writing), Student's Expectations for the year (writing)
What examples of art will be used?	Create Mathematical Images & Unit Project
What types of technology will be incorporated?	Graphing calculator, SMART Board, iPad and overhead projector, Video clip



	<b>OCTOBER</b>
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Essential Questions:	Why are triangular patterns more stable than rectangular patterns?
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Focus/Unit:	M2: Similarity and Congruency Theorem
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<p>Content</p>	<p><b>Understand similarity in terms of similarity transformations</b></p> <p><b>G-SRT.1</b> Verify experimentally the properties of dilations given by a center and a scale factor:</p> <p>a. 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.</p> <p>b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.</p> <p><b>G-SRT.2</b> 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.</p> <p><b>G-SRT.3</b> Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.</p>
<p>Common Core Standards/Skills:</p>	<p><b>Understand congruence in terms of rigid motions</b></p> <p><b>G-CO.6</b> 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.</p> <p><b>G-CO.7</b> 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.</p> <p><b>G-CO.8</b> Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.</p>
<p>Ongoing Formative Assessments:</p>	<p>Quizzes + Chapter Tests + Exit Slip + Unit Packet +class project</p>

<b>Summative Assessment:</b>	End of Unit Exam & State Assessment (NY Regents)
<b>Skills Necessary For Performance Tasks:</b>	<p>1.5 Angles in a Triangle (G.G.30, G.G.31, G.G.37) Sum of interior angles is 180 degrees, Exterior angles equals two opposite interior angles in a triangle</p> <p>1.6 Inequalities in Triangles (G.G.32, G.G.33, G.G.34) Sum of the two short sides must be greater than the longest side of the triangle</p> <p>1.7 The Pythagorean Theorem and Its Converse (G.G.48)</p> <p>1.8 Distance and Midpoint Formulas (G.G.66, G.G.67)</p> <p>1.9 Slope of a Line and Slope of a Perpendicular Line (G.G.62)</p> <p>1.10 Equation of a Line (G.G.63)</p> <p>1.11 Equation of Parallel and Perpendicular Lines (G.G.19, G.G.63, G.G.65, G.G.64)</p> <p>1.12 Triangle Congruence, Similar Triangles and Proportionality in Triangles(G.G.29.44&amp;47)</p>
<b>What specific literacy strategies will be used?</b>	Exit Slip, Vocabulary Words, Explaining Formulas
<b>What examples of art will be used?</b>	Create Mathematical Images & Unit Project
<b>What types of technology will be incorporated?</b>	Calculator, Smart board, video clip
<b>NOVEMBER</b>	

<p><b>Essential Questions:</b></p>	<p>What role does Geometry play in building mathematical concepts? Explain why a bench with a diagonal support is stable and why the one without the support can collapse.</p>
<p><b>Focus/Unit:</b></p>	<p>Basic Trigonometry</p>
<p><b>Content</b></p>	<p>The Pythagorean theorem and its converse and Basic Trigonometry, distance and midpoint formulas, slope of a line and slope of a perpendicular line, equation of a line, equation of parallel and perpendicular lines</p>
<p><b>Common Core Standards/Skills:</b></p>	<p><b>Define trigonometric ratios and solve problems involving right triangles</b>  <b>G-SRT.6</b> 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.  <b>G-SRT.7</b> Explain and use the relationship between the sine and cosine of complementary angles.  <b>G-SRT.8</b> Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. ★  <b>Apply geometric concepts in modeling situations</b>  <b>Module 2.</b> These standards can be taught as applications of similar triangles and the definitions of the trigonometric</p>

ratios.

**Apply trigonometry to general triangles**

**G-SRT.9 (+)** Derive the formula  $A = 1/2 ab \sin(C)$  for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.

**G-SRT.10 (+)** Prove the Laws of Sines and Cosines and use them to solve problems.

**G-SRT.11 (+)** Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).

**Ongoing  
Formative  
Assessments:**

Quizzes + Chapter Tests + Exit Slip + Unit Packet ,Unit project

**Summative  
Assessment:**

End of Unit Exam & State Assessment (NY Regents)

<b>Skills Necessary For Performance Tasks:</b>	1.12 Angles in a Triangle (G.G.30, G.G.31, G.G.37) Sum of interior angles is 180 degrees, Exterior angles equals two opposite interior angles in a triangle 1.13 Inequalities in Triangles (G.G.32, G.G.33, G.G.34) Sum of the two short sides must be greater than the longest side of the triangle 1.14 The Pythagorean Theorem and Its Converse (G.G.48) 1.15 Distance and Midpoint Formulas (G.G.66, G.G.67) 1.16 Slope of a Line and Slope of a Perpendicular Line (G.G.62) 1.17 Equation of a Line (G.G.63) 1.18 Equation of Parallel and Perpendicular Lines (G.G.19, G.G.63, G.G.65, G.G.64)
<b>What specific literacy strategies will be used?</b>	Exit Slip, Vocabulary Words, Explaining Formulas
<b>What examples of art will be used?</b>	Create Mathematical Images & Unit Project
<b>What types of technology will be incorporated?</b>	calculator, SMART Board, video clip
<b>DECEMBER</b>	
<b>Essential Questions:</b>	How do numbers help us in our everyday life? How can we identify the type of function just based upon the behavior of the output? How do we write large/small numbers in simplest forms?

<b>Focus/Unit:</b>	Constructions
<b>Content</b>	Construction of a perpendicular bisector, construction of an angle bisector, construction of perpendicular line, construction of parallel lines
<b>Common Core Standards/Skills:</b>	Constructions
<b>Ongoing Formative Assessments:</b>	Quizzes + Chapter Tests + Exit Slip + Unit Packet+ class project

<b>Summative Assessment:</b>	End of Unit Exam & State Assessment (NY Regents)
<b>Skills Necessary For Performance Tasks:</b>	2.1 Construction of a perpendicular bisector (G.G. 17, G.G.18) 2.2 Construction of an angle bisector (G.G.17) 2.3 Construction of perpendicular lines (G.G.19) 2.4 Construction of parallel lines (G.G.19) 2.5 Determine whether two lines are parallel or perpendicular (G.G.19)
<b>What specific literacy strategies will be used?</b>	Exit Slip, Vocabulary Words, Explaining Formula, unit project
<b>What examples of art will be used?</b>	Create Mathematical Images & Unit Project
<b>What types of technology will be incorporated?</b>	Calculators, SMART Board, video clip
<b>JANUARY</b>	

<b>Essential Questions:</b>	Explain why people prefer square tiles to triangular tiles. How much information is needed to tell whether two figures are congruent? Why hexagons are the best way to divide a space into equal parts with minimal structural support? Why is it that most mathematicians think that partitions in the shape of hexagons are better than equilateral triangles or squares or any shape for maximizing space with least amount of building material?
<b>Focus/Unit:</b>	Polygons
<b>Content</b>	Determine whether two lines are parallel or perpendicular, regular polygons, polygons ad angle measure, sum of interior and exterior angles of a given regular polygon, types of quadrilaterals and classifying quadrilaterals
<b>Common Core Standards/Skills:</b>	Congruence

<b>Ongoing Formative Assessments:</b>	<p>Quizzes + Chapter Tests + Exit Slip + Unit Packet, Triangulation project</p>
<b>Summative Assessment:</b>	<p>End of Unit Exam &amp; State Assessment (NY Regents)</p>
<b>Skills Necessary For Performance Tasks:</b>	<p>2.6 Regular Polygons (Project) (G.G.37)  2.7 Polygons and angle measure (G.G.36)  2.8 Sum of interior and exterior angles of a given regular polygon (G.G.36, G.G. 37)  2.9 Types of Quadrilaterals (Parallelogram, rhombus, square, rectangle, and trapezoid) (G.G. 38, G.G.40, G.G.27, G.G.39)  2.10 Classifying Quadrilaterals (G.G.41)</p>
<b>What specific literacy strategies will be used?</b>	<p>Exit Slip, Vocabulary Words, Explaining Formulas</p>

<b>What examples of art will be used?</b>	<p>Create Mathematical Images &amp; Unit Project</p>
<b>What types of technology will be incorporated?</b>	<p>Graphing calculator, SMART Board , Computers for research, video clip</p>
	
<p><b>FEBRUARY</b></p>	
<b>Essential Questions:</b>	<p>What role does geometry play in soccer?</p>
<b>Focus/Unit:</b>	<p>Coordinate Geometry and their proofs</p>

<b>Content</b>	<p>Triangles and Quadrilaterals in the coordinate plane, congruence and similarity, triangle congruence, proving triangles similar Using slope and distance formula to classify quadrilaterals</p>
<b>Common Core Standards</b>	<p>Coordinate Geometry</p>
<b>Ongoing Formative Assessments:</b>	<p>Quizzes + Chapter Tests + Exit Slip + Unit Packet , homework and class work</p>
<b>Summative Assessment:</b>	<p>End of Unit Exam &amp; State Assessment (NY Regents)</p>
<b>Skills Necessary For Performance Tasks:</b>	<p>3.1 Triangles and Quadrilaterals in the coordinate plane (G.G.27, G.G.69) Investigate, justify and apply properties of triangles and quadrilaterals in the coordinate plane using the distance, midpoint, and slope formulas 3.2 Congruence and similarity (G.G.27, G.G.28, G.G.18)</p>

	<p>3.3 Triangle congruence (SSS, SAS, ASA, AAS, and HL) (G.G.18, G.G. 27, G.G. 29)</p> <p>3.4 Proving Triangles Similar (AA, SAS, and SSS theorems) (G.G.27, G.G.44)</p> <p>3.5 Solving Similarity Problems (G.G.45)</p> <p>3.6 Proportionality in a Triangle (G.G.42, G.G.45, G.G. 46)</p> <p>3.7 Proportionality in a Right Triangle (G.G.47)</p> <p>3.8 Concurrence, Medians and Altitudes in a Triangle (G.G.21, G.G.43, G.G.21), mid segment theorem</p>
<b>What specific literacy strategies will be used?</b>	Exit Slip, Vocabulary Words, Explaining Formulas
<b>What examples of art will be used?</b>	Create Mathematical Images & Unit Project
<b>What types of technology will be incorporated?</b>	calculator, SMART board , overhead projector ,video clip
	<b>MARCH</b>
<b>Essential Questions:</b>	How are perpendicular bisector and angle bisectors of a triangle different? How are they alike?

<b>Focus/Unit:</b>	Circles
<b>Content</b>	Area and circumference of a circle, chords and circles, tangents to circle, secants-secants to circles, tangents and secants, arcs, tangents in a chord on a circle, arcs of a circle cut by two parallel lines
<b>Common Core Standards/Skills:</b>	Circles and Chords
<b>Ongoing Formative Assessments:</b>	Quizzes + Chapter Tests + Exit Slip + Unit Packet

<b>Summative Assessment:</b>	End of Unit Exam & State Assessment (NY Regents)
<b>Skills Necessary For Performance Tasks:</b>	4.1 Area and Circumference of a Circle 4.2 Chords and Circles (G.G.49) 4.3 Tangent to Circles (G.G.50) 4.4 Secants-Secants to Circles (G.G.50) 4.5 Tangents and Secants (G.G.49, G.G.50) 4.6 Arcs (G.G. 51, G.G52) 4.7 Tangent- Chord on /in a Circle (G.G.49, G.G.50) 4.8 Arcs of a Circle cut by two parallel lines (G.G.51) 4.9 Two tangents to a circle from the same external point (G.G.50) 4.10 Two secants in a circle from the same external point (G.G.50)
<b>What specific literacy strategies will be used?</b>	Exit Slip, Vocabulary Words, Explaining Formulas, class project
<b>What examples of art will be used?</b>	Create Mathematical Images & Unit Project
<b>What types of technology will be incorporated?</b>	Calculator, SMART board , overhead projectors , video clip

**APRIL**

**Essential Questions:**

How are the areas of similar rectangles related to the scale factor?

**Focus/Unit:**

Circles in Coordinate Geometry

**Content**

Circles in the coordinate plane, writing the equation of a circle with the center at the origin and a radius, write the equation of a circle given its graph, write the equation of a circle with its center not in the origin, graphing circles with a given center and radius, linear and quadratic systems of equations (graphically)

**Common Core Standards/Skills:**

Coordinate Geometry

<b>Ongoing Formative Assessments:</b>	Quizzes + Chapter Tests + Exit Slip + Unit Packet
<b>Summative Assessment:</b>	End of Unit Exam & State Assessment (NY Regents)
<b>Skills Necessary For Performance Tasks:</b>	5.1 Circles in the coordinate plane (G.G.71, G.G.72, G.G.73, G.G.74) 5.2 Writing the equation of a circle with the center at the origin and a radius (G.G.71) 5.3 Write the equation of a circle given its graph (G.G.72) 5.4 Write the equation of a circle with its center not in the origin (G.G.73) 5.5 Graphing circles with a given center and radius (G.G.73) 5.6 Linear and Quadratic systems of an equation (graphically) (G.G. 70)
<b>What specific literacy strategies will be used?</b>	Exit Slip, Vocabulary Words, Explaining Formulas
<b>What examples of art will be used?</b>	Create Mathematical Images & Unit Project

<b>What types of technology will be incorporated?</b>	graphing calculator and SMART board , video clip
	MAY
<b>Essential Questions:</b>	How do we use angle equality to justify that two lines are parallel?
<b>Focus/Unit:</b>	Solid Geometry

<b>Content</b>	Lines and planes in three-dimensional space, planes and lines in space, perpendicular and parallel planes, three-dimensional shapes and types, measurement of three-dimensional shapes, prisms, cylinders and cones
<b>Common Core Standards/Skills:</b>	Solid Geometry
<b>Ongoing Formative Assessments:</b>	Quizzes + Chapter Tests + Exit Slip + Unit Packet, Class projects on cylinders and Rectangular Prisms
<b>Summative Assessment:</b>	End of Unit Exam & State Assessment (NY Regents)
<b>Skills Necessary For Performance Tasks</b>	6.1 Lines and Planes in three-dimensional space (G.G.1) 6.2 Planes and lines in space (G.G.3) 6.3 Perpendicular and parallel planes (G.G.5, G.G.7, G.G.8, G.G.9) 6.4 Three-dimensional shapes and types (G.G.3, G.G.8, G.G.9) 6.5 Measurement of three-dimensional shapes (Project) (G.G.3, G.G.8, G.G.9, G.G.10) 6.6 Prisms, Cylinders and Cones (G.G.10, G.G.11, G.G.12, G.G.14, G.G.13, G.G.15)

<b>What specific literacy strategies will be used?</b>	Exit Slip, Vocabulary Words, Explaining Formulas
<b>What examples of art will be used?</b>	Create Mathematical Images & Unit Project
<b>What types of technology will be incorporated?</b>	graphing calculator and SMART board , video clip
<b>Essential Questions:</b>	<p style="text-align: center;"><b>JUNE</b></p> What relationship exists among the sides of a right triangle? What happens when you slide or flip a triangle?

<b>Focus/Unit:</b>	Transformations in the Plane
<b>Content</b>	Translation, reflection, rotations, dilations and composition of transformation (Glide Reflection)
<b>Common Core Standards/Skills:</b>	Similarity and Right Triangles
<b>Ongoing Formative Assessments:</b>	Quizzes + Chapter Tests + Exit Slip + Unit Packet
<b>Summative Assessment:</b>	End of Unit Exam & State Assessment (NY Regents)

<b>Skills Necessary For Performance Tasks</b>	<p>7.1 Showing Translation process on the number plane (G.G.54, G.G.55, G.G.61)  7.2 showing Reflection process on the coordinate plane (G.G.54, G.G.55, G.G. 61)  7.3 Rotations on the Cartesian coordinate (G.G.54, G.G.55, G.G.61)  7.4 Dilations on the Cartesian plane (G.G. 58, G.G.59, G.G.60)  7.5 Composition of Transformation on the X-Y axes</p>
<b>What specific literacy strategies will be used?</b>	<p>Exit Slip, Vocabulary Words, Explaining Formulas</p>
<b>What examples of art will be used?</b>	<p>Create Mathematical Images &amp; Unit Project</p>
<b>What types of technology will be incorporated?</b>	<p>Graphing calculator, SMART board, video clip</p>