Course title: Geometry

Description: Geometry explores the foundation of geometric figures and relationships using transformations. Students will learn concepts about and prove relationships with parallel lines, triangles, quadrilaterals, other polygons, similar polygons, right triangles and circles. They will also learn to calculate areas and volumes. A scientific calculator is recommended.

Book: Carter, John, Cuevas, Gilbert, Day, Roger, and Malloy, Carol. ***Glencoe Geometry*** **by McGraw Hill. (ISBN 13: 978-0-07-663929-8)** Copyright 2014. Print.

Prerequisites: Completion of Algebra I with "C" grade or better. Grades 10, 11, or 12

Course Objectives:
Use inductive reasoning to find next term in a number pattern or the patterns in geometric shapes
Apply knowledge of geometric vocabulary such as:
Points, segments, lines, rays, planes, angles, and collinear and coplanar points, symbols for marking figures
Measurement of angles and segments of figures, congruent segments, angle, geometric figures
Classification and properties of polygons, triangles, quadrilaterals
Constructions for segment and angle duplication, segment bisectors, and angle bisectors
Constructions of perpendicular lines and parallel lines
Use constructions and rigid motion to show properties of congruence.
Prove geometric theorems.
Apply the law of syllogism and the law of detachments in an argument.
Linear pairs, vertical angles, supplementary and complementary angles
Relationships of the angles of parallel lines cut by a transversal
Sum of the angles of a triangle
Properties of isosceles and equilateral triangles
Congruent Triangles, and triangles inequalities
Sum of the measures of the interior and exterior angles of a polygon.
Properties of quadrilaterals
Find area of various polygons
Identify the parts of a circle
Properties of chords, tangents of circles, central and inscribed angles.
Find circumference, area, length of an arc, areas of annuli, sectors, and segments of circles.
Find surface area and volume of a solid
Pythagorean Theorem
Solve problems using Pythagorean theorem and its converse.
Find side lengths of special right triangles: 45-45-90 and 30-60-90 triangles
Apply the definition of similar polygons to solve problems
Solve problems using ratio and proportion
Definition of sine, cosine and tangent ratios
Use tables to solve problems involving sine, cosine and tangent ratios
Apply trigonometry to simple word problems.

Course Length: Three trimesters

Course Title: Geometry

Course Outline:

- ### Trimester 1

Unit 1	Unit 2	Unit 3	Unit 4
Tools of Geometry	**Reasoning & Proof**	**Parallel & Perpendicular Lines**	**Congruent Triangles**
11 Days	15 Days	10 Days	13 Days
G.CO.1 G.MG.1 G.GMD.3 G.CO.12 G.GPE.7	G.MG.3 G.CO.9 G.CO.12	G.CO.1 G.CO.12 G.CO.9 G.GPE.5 G.MG.3	G.CO.5, 6, 7, 10, 12 G.GPE.4 G.GPE.5 G.SRT.5

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Unit 5 Relationships in Triangles	Unit_6 Quadrilaterals	Unit 7 Proportions & Similarity	Unit 8 Right Triangles & Trigonometry	Unit Transformations & Symmetry
10 Days	9 Days	10 Days	11 Days	12 Days
G.CO.10 G.CO.12 G.MG.3	G.MG.1 G.CO.11 G.GPE.4 G.MG.3	G.MG.3 G.SRT.2 G.SRT.4 G.SRT.5	G.MG.3 G.SRT.4,5,6,7,8,9,10,11 G.GPE.6	G.CO.4 G.CO.12 G.CO.5 G.SRT.1 G.CO.2 G.SRT.3 G.GMD.4 G.CO.8 G.CO.3

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Unit Circles	Unit Areas of Polygons & Circles	Unit Extending Surface Area & Volume	Unit Probability & Measurement
11 Days	10 Days	13 Days	11 Days
G.CO.1 G.CO.13 G.C.1,2,4,5 G.GPE.1 G.MG.3 G.GPE.2 G.CO.12 G.GPE.6	G.GPE.7 G.C.5 G.MG.3 G.GMD.1 G.MG.2 G.MG.1	G.GMD.4 G.GMD.1 G.MG.3 G.GMD.3 G.MG.1	S.CP.9 S.MD.6 S.MD.7 S.CP.7 G.MG.3 S.CP.1,2,3,4,6,7

Note: There are several days available each semester for review, testing, and teacher directed rich tasks.

Grades:

Grades are calculated based on the following weighting:

- Tests and Quizzes: 70%
- Assignments: 30%

Trimester Grades are based on the Madison High School grade scale shown below:

A	94-100%	C	73-76%
A-	90-93%	C-	70-72%
B+	87-89%	D+	67-69%
B	83-86%	D	63-66%
B-	80-82%	D-	60-62%
C+	77-79%	F	Below 60%