

SCHOOL FOR EXCELLENCE

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**Mathematics**

**Teacher: Mr. Weir**

**SY 2017-2018**

**Classroom Policies and Guidelines (Rules)**

**Geometry Syllabus**

1. All students are expected to come to class on time. On arrival, students are expected to sign attendance register; collect handouts from the designated spot located in the classroom then proceed to their assign seat.
2. Students are expected to work to the best of their ability to produce excellent work.
3. Students are expected to have respect for themselves, fellow classmates, teachers, support staff at all times.
4. Hats, do-rags, cell phones, iPods, PSPs or any other form of electronic device are not allowed in the classroom.
5. Students are expected to cooperate in all group work and be supportive in each other's learning. This is a part of your ongoing social development.
6. Students are expected to turn in all homework assignments on the required due dates, NO EXCEPTIONS.
7. Foods or drinks are not allowed in the labs, NO EXCEPTIONS.

## **School Grading Policy**

**10% College preparedness**

**40% Exams**

**40% Class work/Projects**

**5% Homework**

**5% organizational skills/time management**

**The geometry class will cover the basic skills and foundation necessary for future advance courses. The main topic to be studied are outline below in sequence, but could be changed depending on the class progress.**

### **UNIT 1: Basics of Geometry**

1.1 Segments and Angles (G.G.35, G.CO)

1.2 Line segment and intersecting lines

Vertical angles

1.3 Compound and conditional statements (G.G.25, G.G.26)

Conjunction, disjunction, conditional, negation, inverse, contrapositive, and logical equivalence

1.4 Parallel Lines and Transversals (G.G.35)

Corresponding angles, alternate interior angles, alternate exterior angles, same side interior angles

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

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

1.7 The Pythagorean Theorem and Its Converse (G.G.48)

1.8 Distance ,Midpoint Formulas and directed line segment (G.G.66, G.G.67)

1.9 Slope of a Line and Slope of a Perpendicular Line (G.G.62)

1.10 Equation of a Line (G.G.63)

1.11 Equation of Parallel and Perpendicular Lines (G.G.19, G.G.63, G.G.65, G.G.64)

### **Unit 2: Constructions**

- 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)
- 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)

### **Unit 3: Coordinate Geometry**

- 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)
- 3.3 Triangle congruence (SSS, SAS, ASA, AAS, and HL) (G.G.18, G.G. 27, G.G. 29)
- 3.4 Proving Triangles Similar (AA, SAS, and SSS theorems) (G.G.27, G.G.44)
- 3.5 Solving Similarity Problems (G.G.45)
- 3.6 Proportionality in a Triangle (G.G.42, G.G.45, G.G 46)
- 3.7 Proportionality in a Right Triangle (G.G.47)
- 3.8 Concurrence, Medians and Altitudes in a Triangle (G.G.21, G.G.43, G.G.21)
- 3.9 Right Triangle Trigonometry

### **Unit 4: Circles**

- 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), Arc Length
- 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)

**Unit 5:**  
**Circles in Coordinate Geometry**

- 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)

**Unit 6:**  
**Solid Geometry**

- 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)

**Unit 7:**  
**Transformations in the Plane**

- 7.1 Translation (G.G.54, G.G.55, G.G.61)
- 7.2 Reflection (G.G.54, G.G.55, G.G. 61)
- 7.3 Rotations (G.G.54, G.G.55, G.G.61)
- 7.4 Dilations (G.G. 58, G.G.59, G.G.60)
- 7.5 Composition of Transformation