√M powers!

GEOMETRY

Mathematics | Prince George's County Public Schools | SY 2008-2009

Course Code: 343003, 343023, 343063
Prerequisites: Algebra 1
Credits: 1.0 Math, Merit

Geometry provides students with the skills outlined in the Maryland Core Learning Goals for Geometry. These skills include using logic to develop arguments, working with the postulates and theorems of Euclidian geometry, applying rules for parallel and perpendicular lines, identifying congruent and similar figures, classifying polygons, measuring angles and segments, writing proofs of triangle congruence, drawing, constructing, and performing plane transformations.

INTRODUCTION:

Typically in a Math class, to understand the majority of the information it is necessary to continuously practice your skills. This requires a tremendous amount of effort on the student's part. Each student should expect to dedicate 2 - 3 hours of studying for every hour in class. Some hints for success in a Math class include: attending class daily, asking questions in class, and thoroughly completing all the homework problems with detailed solutions as soon as possible after each class session.

INSTRUCTOR INFORMATION:

Name: Todd Eiholzer
E-Mail: todd.eiholzer@pgcps.org
Planning: 4th period
Phone: 301-636-8000

CLASS INFORMATION:

COURSE NUMBER:
CLASS MEETS: Every other day for 90 minutes
ROOM:311
TEXT: *Geometry*, Prentice Hall
WEB SITE: www.phsuccessnet.com

CALCULATORS

The use of a graphing calculator is required. While participants may use any graphing calculator, the instruction in the course requires the TI-83. The TI-84 is very similar and can be used as well. Knowledge and competence for use of other graphing calculators will be the sole responsibility of the student.

GRADING

Your grade will be computed from your class work, homework, tests, and quizzes. The following weighted average will be used to calculate your grade.

Classwork/ Group Participation:	20%
Homework:	30%
Tests/Quizzes/Projects:	50%

Geometry Mr. Eiholzer

Supplies List

1 Three ring binder
   Sections
   - > Class Handouts
   - > Objectives and Warm-ups
   - > Class Notes
   - > Homework
   - > Tests
   - > Quizzes
   - > Project Sheets

2 Pencil
3 Lined Paper
4 Graph Paper
5 Straightedge (ruler)
6 Compass
7 Protractor
8 Pouch to keep tools in (Compass, Protractor)

Your grade will be determined using the following scale:

90% - 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
59% and below	E

SAT:

SAT preparation is infused into daily instruction. The curriculum is embedded with standardized test preparation activities and test-taking strategies that will help students be successful on high-stakes tests like the SAT, ACT or college entrance exams. The practice in each lesson will prepare the students for the format as well as for the content.

IMPORTANT DATES

First Quarter Progress Report	Monday, October 6, 2008
End of First Quarter:	Thursday, October 30, 2008
First Quarter Report Cards Released	Monday, November 10, 2008
Parent/Teacher Conferences	Tuesday, November 11, 2008
Thanksgiving	November 26 – November 28, 2008
Second Quarter Progress Report	Thursday, December 18, 2008
Winter Break	Monday, December 22, 2008 – January 2, 2009
End of Second Quarter	Thursday, January 29, 2009
Second Quarter Report Card Released	Monday, February 9, 2009
Third Quarter Progress Report	Friday, March 13, 2009
Spring Break	Monday April 6, 2009 –April 13, 2009
End of Third Quarter	Thursday, April 16, 2009
Third Quarter Report Card Released	Friday, April 24, 2009
Fourth Quarter Progress Report	Monday, May 11, 2009
End of Fourth Quarter	Thursday, June 18, 2009

STUDENT LEARNING OUTCOMES

Domain I: Inductive Reasoning With Polygons

Expectancies: The students will describe the characteristics of geometric figures and apply their properties.

Objectives: The student will:

1. Find the next element of a number or picture pattern.
2. Identify points, lines, rays, and segments.
3. Identify a pair of perpendicular lines.
4. Identify the vertex and sides of an angle.
5. Compute the measure of an angle using a protractor.
6. Identify an angle as right, obtuse, acute, or straight.
7. Compute the complement and supplement of an angle.
8. Find a missing angle using a property of vertical angles.
9. Identify parallel lines and compute angles formed by a transversal.
10. Categorize triangles by angles and sides.

11. Identify properties of isosceles triangles.
12. Compute the missing angle of a triangle given two angles.
13. Compute exterior angles of a triangle given the interior angles.
14. Identify a polygon (up to ten sides) by name.
15. Draw the diagonals of a polygon.
16. Compute the sum of the interior and exterior angles of a convex polygon.
17. Compute the measure of an interior or exterior angle of a regular polygon.
18. Find missing parts of congruent triangles and identify the corresponding parts of congruent triangles that are congruent.
19. Identify and construct and/or draw a median and altitude of a triangle using technology and tools.
20. Identify and construct or draw an angle bisector using technology and tools.
21. Identify and construct or draw a perpendicular bisector of a line segment using technology and tools.
22. Identify points of concurrency and apply them to real-life problems.
23. Identify quadrilaterals by their special properties.
24. Draw and compute the midsegment of a trapezoid.
25. Identify three lengths which will or will not form a triangle.
26. Identify the largest and smallest side/angle given the angle/side of a triangle.
27. Apply properties of coordinate geometry of parallel and perpendicular lines.

Domain II: Inductive Reasoning With Circles
Indicators: The students will describe the characteristics of circles and apply their properties.

Objectives: The student will:
1. Draw a radius, chord, tangent, secant, and diameter of a circle.
2. Draw a central angle, major arc, minor arc, and semicircle of a circle
3. Compute the measure of a central angle of a circle.
4. Draw and compute the measure of an inscribed angle of a circle.
5. Compute the measure of an angle inscribed in a semicircle.

Domain III: Transformations
Expectancies: Students will discuss properties of symmetry; discuss the geometry of the movement of figures.

Objectives: The student will:
1. Draw the reflection of an object in a line.
2. Draw the translation of an object in a plane.
3. Draw the rotation of an object in a plane.
4. Draw the product of two plane transformations.

Domain IV: Area and Perimeter
Indicators: Students will determine the perimeter and area of polygons and circles, and the surface area of solids.

Objectives: The student will:
1. Compute the area of a rectangle.
2. Compute the area of a polygon made up of rectangles.
3. Compute the area of a parallelogram.
4. Compute the area of a triangle (directly or indirectly) using base and height of triangle.
5. Compute the area of a rhombus.

6. Compute the area of a trapezoid.
7. Draw the apothem and radius of a regular polygon.
8. Compute the area of a regular polygon using measures of apothem and perimeter.
9. Compute the area of a circle given the radius or diameter.
10. Compute the radius (diameter) of a circle given the area or circumference.
11. Draw a sector of a circle.
12. Compute the arc length of a sector of a circle.
13. Compute the area of a sector of a circle.

Domain V: Right Triangles and Trigonometry
Indicators: Students will use the properties of right triangles and trigonometric ratios to solve problems in a context.

Objectives: The student will:
1. Simplify square roots and estimate values.
2. Apply the distance formula.
3. Compute the hypotenuse of a right triangle given the legs of the triangle.
4. Compute leg of a right triangle given other leg and the hypotenuse.
5. Identify a triple of numbers that forms a right triangle.
6. Compute missing sides of a 45-45-90 right triangle.
7. Compute missing sides of a 30-60-90 right triangle.
8. Compute missing sides of a right triangle using the tangent ratio.
9. Compute missing sides of a right triangle using the sine ratio.
10. Compute missing sides of a right triangle using the cosine ratio.
11. Solve a word problem using an angle of depression.
12. Solve a word problem using an angle of elevation.

Domain VI: Volume
Expectancies: Students will determine the volumes of solid figures.

Objectives: The student will learn to:
1. Compute the volume of a right prism.
2. Compute the volume of a right pyramid given its height and the area of its base.
3. Compute the volume of a right circular cylinder given its radius or diameter and height.
4. Compute the volume of a right circular cone given its radius (or diameter) and height.
5. Compute the volume of a sphere given its radius or diameter.
6. Compute the equation of a circle.
7. Compute the equation of an ellipse.

Domain VII: Similarity
Indicators: Students will identify and verify similar figures and apply the proportionality of their corresponding parts.

Objectives: The student will learn to:
1. Identify two triangle / polygons as similar.
2. Compute missing sides of similar triangles using proportions.
3. Compute a missing length given a scale drawing.
4. Compute missing parts of triangles given a line parallel to one side of the triangle.

5. Draw the dilation (expansion or contraction) of an object in a plane.
6. Compute missing sides of similar polygons.
7. Compute ratio of perimeters/area of similar triangles given sides of one triangle and one side of another.

Domain VIII: Deductive Reasoning
Indicators: Students will use deductive reasoning to verify conjectures; and justify problem solutions.

* The following objectives should be integrated into all domains.

Objectives: The student will learn to:

1. Understand criteria for justification of responses including the use of words, symbols, and diagrams.
2. Use conjectures in extended response questions.