MATHEMATICS CURRICULUM

GEOMETRY REGULAR

The District School Board of Collier County

"Unlocking Each Student's Gift"

Florida Sunshine State Mathematics Standards

COURSE DESCRIPTION/ STANDARDS

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COURSE DESCRIPTION

Geometry Regular

FLORIDA DEPARTMENT OF EDUCATION

COURSE DESCRIPTION - GRADES 9-12

Subject Area: Mathematics
Course Number: 1206310
Course Title: Geometry
Credit: 1.0

Will meet graduation requirements for Mathematics

Basic assumptions regarding mathematics education: all students will have access to calculators and computers; classroom activities will be student-centered; all courses will have increased emphasis on estimation; and evaluation will include alternative methods of assessment.

A. Major Concepts/Content. The purpose of this course is to develop the geometric relationships and deductive strategies which can be used to solve a variety of real world and mathematical problems.

The content will include, but not be limited to, the following:

- constructions
- coordinate geometry and transformations
- deductive reasoning
- inductive reasoning
- parallelism and perpendicularity
- perimeter, area, and volume
- right triangle trigonometry
- segments, angles, and circles
- similarity and congruence
- two- and three-dimensional figures

This course shall integrate Goal 3 Student Performance Standards of the Florida System of School Improvement and Accountability as appropriate for the content and processes of the subject matter.

B. Special Note. Credit in this course precludes credit in Geometry Honors.

C. Course Requirements. After successfully completing this course, the student will:

1. Demonstrate an understanding of the terminology and fundamental properties of geometry.

MA.C.2.4.1 understand geometric concepts such as perpendicularity, parallelism, tangency, congruency, similarity, reflections, symmetry, and transformations including flips, slides, turns, enlargements, rotations, and fractals.

MA.C.2.4.2 analyze and apply geometric relationships involving planar cross sections (the intersection of a plane and a three-dimensional figure).

2. Use geometric models to represent and solve problems.

MA.C.1.4.1 use properties and relationships of geometric shapes to construct formal and informal proofs.

MA.C.3.4.1 represent and apply geometric properties and relationships to solve real-world and mathematical problems including ratio, proportion, and properties of right triangle trigonometry.

3. Demonstrate an understanding of deductive and inductive reasoning.

MA.C.1.4.1 use properties and relationships of geometric shapes to construct formal and informal proofs.

4. Demonstrate the ability to solve real-world problems by applying geometric properties.

MA.A.4.4.1 use estimation strategies in complex situations to predict results and to check the reasonableness of results.

MA.B.1.4.1 use concrete and graphic models to derive formulas for finding perimeter, area, surface, circumference, and volume of two- and three-dimensional shapes, including rectangular solids, cylinders, cones, and pyramids.

MA.B.1.4.2 use concrete and graphic models to derive formulas for finding rate, distance, time, angle measures, and arc lengths.

MA.B.1.4.3 relate the concepts of measurements to similarity and proportionality in real-world situations.

MA.B.2.4.1 select and use direct (measured) and indirect (not measured) methods of measurement as appropriate

MA.B.3.4.1 solve real-world and mathematical problems involving estimates of measurements, including length, time weight/mass, temperature, money, perimeter, area, and volume and estimates the effects of measurement errors on calculations.

5. Demonstrate an understanding of transformational and coordinate geometry.

MA.C.3.4.2 using a rectangular coordinate system (graph), apply and algebraically verify properties of two- and three-dimensional figures, including distance, midpoint, slope, parallelism, and perpendicularity.

MA.C.2.4.1 understand geometric concepts such as perpendicularity, parallelism, tangency, congruency, similarity, reflections, symmetry, and transformations including flips, slides, turns, enlargements, rotations, and fractals.