Honors Geometry.

Rationale

The need to understand and be able to use mathematics in everyday life and in the workplace has never been greater and will continue to increase. The underpinnings of everyday life are increasingly mathematical and technological. Just as the level of mathematics needed for intelligent citizenship has increased, so too has the level of mathematical thinking and problem solving needed in the workplace. Those who understand and can do mathematics will have significantly enhanced the opportunities and options for shaping their futures. Mathematical competence opens doors to productive futures.

Course Description

Honors Geometry enriches the same concepts as Geometry through discovery methods of instruction. It is the study of logical reasoning, which is used to draw conclusions dealing with geometric shapes and their interrelationships. Emphasis is placed on the ability to explain and/or show all steps needed to support conclusions. This course will relate and apply the characteristics of geometric shapes to real life through algebraic concepts. Calculators will be used when appropriate.

Prerequisites

Prerequisite: Honors Algebra II or Algebra II Accelerated
Open to: 10, 11, 12
Credit: 1 Unit - Two Semesters (Math)

Course Objectives

1. At an enriched level, the student will extend his/her knowledge of rational and irrational numbers by using symbolic, graphic and numeric representations as they relate to 2-D and 3-D geometric figures with 80% accuracy. CLE: MA, Geometry, Numbers and Operations, 1A, 1B, 2D, 3D, 3E. Assessed on End of Course Exam, Geometry. (MA1, 5; 1.10, 3.2, 3.3)

2. The student will read word problems and apply complex geometric concepts to real-life situations with 80% accuracy. CLE: Geometry, Geometric and Spatial Relationships, 2A; Geometry, Measurement, 2B. Assessed on End of Course Exam, Geometry. (MA2; 3.1, 3.3) (A+: Reading)

3. At an enriched level, the student will reinforce algebra skills through problems involving both linear and quadratic relationships with 80% accuracy. CLE: MA, Geometry, Algebraic Relationships, 1B, 1C, 2B, 3A, 4A. Assessed on End of Course Exam, Geometry. (MA1, 4; 1.6, 3.2)

4. The student will write complex geometric proofs by supplying the statements and reasons with 80% accuracy. CLE: MA, Geometry, Geometric and Spatial Relationships, 1A MLG: Geometry, Core Content A, B. Assessed on End of Course Exam, Geometry. (MA2; 3.5) (A+: Writing)

5. At an enriched level, the student will develop methods of reasoning to analyze properties of 2-D and 3-D figures including lines, polygons, circles, similarity, and right triangle trigonometry with 80% accuracy. CLE: MA, Geometry, Geometric and Spatial Relationships, 1A, 2A, 3A, 3C, 4A, 4B. MLG: Geometry, Core Content A, B. Assessed on End of Course Exam, Geometry. (MA2; 1.10, 3.3, 3.5, 4.1)

6. At an enriched level, the student will verbally explain the reasoning behind proposed solutions to multistep geometric problems with 80% accuracy. CLE: MA, Geometry, Geometric and Spatial Relationships, 1A. MLG: Geometry, Core Content A, B. Locally assessed. (MA2; 3.5) (A+: Speaking)

7. At an enriched level, the student will estimate, measure, and calculate distances, areas, and volumes of geometric figures including the use of the Pythagorean Theorem and right triangle trigonometry with 80% accuracy. CLE: MA, Geometry, Measurement, 2B, 2C, 2E. MLG: Geometry, Core Content C. Assessed on End of Course Exam, Geometry. (MA2, 4; 1.6, 1.10, 3.1)

8. The student will research complex properties of geometric figures and present the findings with 80% accuracy. CLE: MA, Geometry, Geometric and Spatial Relationships, 4B. MLG: Geometry, Core Content A. Locally assessed. (MA2; 3.3) (A+: Research)

9. At an enriched level, the student will demonstrate knowledge of probability as it pertains to 2-D and 3-D geometric figures with 80% accuracy. CLE: MA, Geometry, Data and Probability, 1A, 1C. MLG: Geometry, Core Content D. Assessed on End of Course Exam, Geometry. (MA3, 6; 1.2, 1.8)

BOE Approved 12/14/17