



**RADNOR TOWNSHIP SCHOOL DISTRICT**  
**Course Overview**  
Seminar Geometry- Grade 9



### **General Information**

Prerequisite: **Seminar Algebra 1 or teacher recommendation**  
Length: Full Year  
Format: meets daily for one period

### **Course Description**

Seminar Geometry is an Honors level course and receives weighted grading. **Honors level** courses are intended for the motivated math student who is very good with mathematics but needs more teacher guidance to assist in the mastery of the material. The course will involve accelerated pacing and a demanding workload with some written explanations expected. Students on this level will be prepared to take AP Calculus. This course is a challenging, rigorous, proof-based approach to Geometry. Students in Seminar Geometry analyze geometric figures using deductive reasoning, make conjectures and formulate hypotheses, draw conclusions and make connections with other mathematical concepts, and model situations geometrically as a problem solving strategy. Algebraic and geometric skills are integrated throughout the curriculum.

### **Course Objectives:**

- 1) To develop the ability to think mathematically.
- 2) To enhance problem solving ability.
- 3) To use technology appropriately.
- 4) To present a mathematical model of the physical world.
- 5) To provide experience in solving geometry problems by deductive methods, direct or indirect.
- 6) To supplement the basics of plane geometry with a foundation in space geometry, coordinate geometry and transformational geometry.
- 7) To see the interrelationship of geometry to other fields of mathematics and relevant life situations.
- 8) To challenge and utilize the inquisitive and logical minds of the accelerated math students.
- 9) To foster specific problem solving strategies in an overall problem solving approach to mathematics.

### **Common Assessments:**

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Grades will be based on quizzes and tests. In addition, teachers may use homework, group activities, and/or projects for grading purposes. All students will take departmental midyear and final exams. The Radnor High School grading system and scale will be used to determine letter grades.

## ***Major Units of Study:***

Unit One: INTRODUCTION TO GEOMETRY

Unit Two: BASIC CONCEPTS AND PROOFS

Unit Three: CONGRUENT TRIANGLES

Unit Four: LINES IN THE PLANE

Unit Five: PARALLEL LINES AND RELATED FIGURES

**Unit Six:** LINES AND PLANES IN SPACE

Unit Seven: POLYGONS

Unit Eight: SIMILAR POLYGONS

Unit Nine: THE PYTHAGOREAN THEOREM

Unit Ten: CIRCLES

Unit Eleven: AREA

Unit Twelve: SURFACE AREA AND VOLUME

Unit Thirteen: COORDINATE GEOMETRY EXTENDED

Unit Fourteen: INEQUALITIES

## ***Materials & Texts***

Geometry for Enjoyment and Challenge; McDougal, Littell; 1991

- Non-graphing, scientific calculator
- Geometer, compass, and straight edge
- Three – Ring Binder Notebook
- Water-Based Overhead Marker

## ***Summer Assignment***