Northern York County School District

Curriculum Overview

Course: 1.06 Academic Geometry	
Grade Level: 9/10	
Development/Revision Date: May 2022	**Length of Time:** 180 days

Course Description:

This course is for those students who have successfully completed Algebra I in the 8th grade or 9th grade. Geometry is the study of logical reasoning. Points, lines, and planes are used as the building blocks of geometric figures, and as the basic models from which to reason. The course will include topics in plane geometry including Geometric Properties & Reasoning with emphasis placed on formal proofs and problem-solving involving algebra skills. A goal of this course is to prepare students for the demands of mathematics-related degrees.

Course Objectives:

- Write Geometric Proofs with scaffolding (including direct, indirect, and paragraph)
- Develop Inductive & Deductive reasoning skills
- Comprehend foundational geometric concepts including lines & angles, parallel & perpendicular lines, congruent figures, similarity, and right triangle trigonometry
- Strengthen and expand Algebra I skills through geometric topics (with focus on fractions, radicals, and factoring)
- Prepare a solid foundation for students to advance to Academic Algebra II, Trigonometry, Calculus, and higher-level collegiate mathematics.

Foundational Units:

- Basics of Geometry
- Reasoning & Proofs
- Parallel & Perpendicular Lines
- Congruent Triangles
- Relationships within Triangles
- Similarity
- Right Triangles & Trigonometry
- Circles
- Surface Area & Volume

Related Standards:

CC.2.3.HS.A.3	Verify and apply geometric theorems as they relate to geometric figures.
CC.2.3.HS.A.13	Analyze relationships between two-dimensional and three-dimensional objects.
CC.2.3.HS.A.14	Apply geometric concepts to model and solve real world problems
CC.2.2.HS.D.9	Use reasoning to solve equations and justify the solution method.

Concepts:

- Proofs
- Logic
- Problem Solving
- Parallel and Perpendicular Lines
- Congruent Figures
- Similarity
- Properties of Triangles
- Properties of Polygons
- Properties of Circles
- Area, Volume, Surface Area

Competencies:

Students will be able to…

- Apply algebraic skills to solve geometric concepts
- Apply the laws of logic to problem solving
- Write a geometric proof
- Apply the properties of parallel lines
- Identify and use congruent figures
- Use and apply the properties of similarity
- Use right triangles and trigonometric functions to solve problems
- Calculate areas, volumes, and surface areas

Learning Activities:

- Collaborative Work/Activities
- Guided Notes
- Online Formative Assessments/Activities
- Homework Practice
- Guided Practice
- Independent Practice
- Warm-up Problems/Activities

Performance Tasks:

- Unit Assessments
- Presentations
- Projects

Other Assessment Measures: Homework, Classwork, Enrichment Projects

Textbook/Primary Resource: Ron Larson & Laurie Boswell, Geometry, Big Ideas Learning

Supplemental Resource Materials: District-created resources, Online resources