



Geometry - Course Syllabus

Description:

This course formalizes what students have learned about geometry in the middle grades, with a focus on reasoning and making mathematical arguments. Mathematical reasoning is introduced with a study of triangle congruency, including exposure to formal proofs, and geometric constructions. Then students extend what they have learned to other essential triangle concepts, including similarity, right triangle trigonometry, and the Laws of Sines and Cosines. Moving on to other shapes, students justify and derive various formulas for circumference, area, and volume, as well as cross-sections of solids and rotations of two-dimensional objects. Students then make important connections between geometry and algebra, including special triangles, slopes of parallel and perpendicular lines, and parabolas in the coordinate plane, before delving into an in-depth investigation of the geometry of circles. The course closes with a study of set theory and probability, as students apply theoretical and experimental probability to make decisions informed by data analysis.

Textbook: Geometry Techbook – Discovery Education

Course objectives:

Throughout the course, you will meet the following goals:

- Define trigonometric ratios and solve problems involving right triangles
- Understand similarity in terms of similarity transformations and prove theorems involving similarity.
- Define trigonometric ratios, apply trigonometry to general triangles and solve problems involving right triangles
- Visualize relationships between two-dimensional and three-dimensional objects
- Apply knowledge of geometric concepts in modeling situations

Contents:

Semester A

Unit 1: Foundations of Geometry
Unit 2: Geometric Transformations
Unit 3: Intersecting Lines
Unit 4: Triangle Geometry
Unit 5: Similarity

Semester B

Unit 6: Trigonometry
Unit 7: The Geometry of Circles
Unit 8: Triangles and Circles
Unit 9: Quadrilaterals and Other Polygons
Unit 10: 3-D Figures

Grading Scale

A = 90-100%
B = 80-89%
C = 70-79%
D = 60-69%
F = under 59%

Grade Weighting

Chapter Quizzes..... 70%
Cumulative Exam 30%
100%