GEOMETRY: SESSION 2

Course Description

This course is designed for students to use problem solving and real-world applications to gain the knowledge of geometric concepts and their practical uses. In geometry, we study the rules of the spaces and objects in our world. Geometry lets us make accurate predictions about the sizes of triangles, circles, and rectangles, which lets us calculate, design, and build. Geometry helps architects design studios, farmers buy the right amount of seeds for their land, engineers build houses, and pilots calculate the amount of time they need to fly to reach another city. We use geometry to calculate how much paint we need to buy to cover a wall and the exact angle we should use to launch a rocket to hit a distant target. In this course, we also study the relationships that exist between lines and angles. Urban planners study lines and angles to efficiently arrange houses, buildings, roads, and highways. Our street maps, water supply, and electrical connections all depend on these precise geometric calculations. How much space is inside a three-dimensional object? You may not realize you are using principles of geometry when you are getting ready for a trip and you need to calculate how to fit two adults, three kids, four suitcases, and a dog into your car. This course is the second half of Geometry and focuses on similarity, right triangle trigonometry, circles, perimeter and area, and surface area and volume. This course will culminate with a Final Exam. This course is for students that have taken and successfully passed the first half of Geometry.

Prerequisite

Algebra 1 (Session 1 and Session 2) & Geometry: Session 1

Credit Requirement Area

Math

Learning Objectives

- Students will determine if two given figures are similar.
- Students will use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.
- Students will explain and use the relationship between the sine and cosine of complementary angles.
- Students will use trigonometric ratios and the Pythagorean theorem to solve right triangles in applied problems.
- Students will describe relationships among inscribed angles, radii, and chords.
- Students will use volume and surface area formulas for cylinders, pyramids, cones, and spheres to solve problems.
- Students will describe objects using geometric shapes, their measures, and their properties.
- Students will use the formulas for the area and circumference of a circle to solve problems.
- Students will solve real-world and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Suggested Weekly Schedule

Week	Graded Activities	Suggested Due Date	% Points
1	Assessment: Similarity	Friday of Week 1	100%
Week 1 Total Percentage Towards Final Grade			**16%**

Week	Graded Activities	Suggested Due Date	% Points
2	Assessment: Right Triangle Trigonometry	Friday of Week 2	100%
Week 2 Total Percentage Towards Final Grade			**16%**
3	Assessment: Circles	Friday of Week 3	100%
Week 3 Total Percentage Towards Final Grade			**16%**
4	Assessment: Perimeter and Area	Friday of Week 4	100%
Week 4 Total Percentage Towards Final Grade			**16%**
5	Assessment: Surface Area and Volume	Friday of Week 5	100%
Week 5 Total Percentage Towards Final Grade			**16%**
6	Final Exam: Geometry Session 2	Friday of Week 6	100%
Week 6 Total Percentage Towards Final Grade			**20%**
WEIGHTED TOTAL			**100%**