Geometry 1
MTHH 035 059
Credits: 0.5 units / 5 hours / NCAA

Course Description

This course is the first of two courses designed to help students develop reasoning skills using geometric terms and processes, concepts of logic, and applied problem solving. Topics covered in this course include patterns, inductive and deductive reasoning, models, points, lines, coordinate planes, parallel lines, measuring angles, basic constructions, reasoning and proofs, parallel and perpendicular lines, congruent triangles, and relationships within triangles. Frequent skill checks, guided practice sections, and reviews will help ensure that students get the most from this course. Career connections sections in every lesson help students learn more about career choices. This course uses many of the problem solving skills and equations learned in First Year Algebra. Students who have not completed at least one year of algebra may need to review linear and quadratic equations and relationships

Graded Assessments: 6 Unit Evaluations; 2 Projects; 3 Proctored Progress Tests

Course Objectives

When you have completed the materials in this course, you should be able to:

1. Identify and name the basic terms of geometry.

2. How to apply the basic tools of geometry to points, lines, planes, and angles.

3. Identify the different transformations and apply them in a coordinate plane.

4. Use all the methods of reasoning.

5. Prove algebraic and geometric theorems by writing two-column proofs.

6. Understand and apply properties of parallel and perpendicular lines.

7. Prove triangles congruent.

8. Explain how to find and use bisectors, medians, and altitudes in triangles.

9. Apply inequalities in one and two triangles.

10. Identify right triangles and apply the Pythagorean Theorem.

11. Classify quadrilaterals.

12. Use the properties of parallelograms to define shapes.

13. Draw basic constructions with a compass and straightedge.

14. Illustrate the uses of a coordinate plane and apply geometric properties to graphs.

Course Outline

Unit 1: Fundamentals of Geometry
Teacher Connect 1

Lesson 1: Geometry Basics

Lesson 2: Basic Formulas and Transformations

Unit 1 Evaluation

Unit 2: Logic and Proof
Lesson 3: Inductive and Deductive Reasoning

Lesson 4: Introduction to Proofs

Unit 2 Evaluation

Teacher Connect 2

Project 1

Progress Test 1

Unit 3: Parallel and Perpendicular Lines
Lesson 5: Parallel, Perpendicular, and Skew Lines

Lesson 6: Slope and the Coordinate

Unit 3 Evaluation

Teacher Connect 3

Unit 4: Congruent Triangles
Lesson 7: Angles and Triangles

Lesson 8: Proving Triangles Congruent

Lesson 9: Solving Triangle Problems

Unit 4 Evaluation

Teacher Connect 4

Progress Test

Unit 5: Triangles and Inequalities

Lesson 10: Special Segments in Triangles

Lesson 11: Relationships in Triangles

Unit 5 Evaluation

Teacher Connect 5

Project 2

Unit 6: Quadrilaterals

Lesson 12: Properties of Polygons and Parallelograms

Lesson 13: Special Quadrilaterals

Unit 6 Evaluation

Teacher Connect 6

Progress Test 3

Required Textbook and Materials
(available through Follett virtual bookstore at http://highschool.nebraska.bkstr.com)

To complete the activities and assignments in *Geometry 1*, you will need certain items. A math kit containing the *** items** is available for purchase from UNHS, or you can acquire them on your own.

   *1 compass

   *1 protractor

   *1 pad of graph paper (8.5 x 11 in. pad, quad ruled or centimeter square/ 4 squares per inch)

   *10 sheets of tracing paper

   1 straightedge or ruler

   1 set of 12 colored pencils

   2 pencils & 1 eraser

   1 notebook (containing paper) or about 30 sheets of regular-sized scratch paper

   scissors