

# Common Core Geometry

## Syllabus

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**Course Number:** MA2004

**Grade level:** 9–12

**Prerequisite Courses:** Common Core Algebra I

**Credits:** 1.0

### Course 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.

### 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
- Recognize and explain the concepts of conditional probability and independence
- Apply knowledge of geometric concepts in modeling situations
- Translate between the geometric description and the equation for a conic section

## Student Expectations

This course requires the same level of commitment from you as a traditional classroom course would. Throughout the course, you are expected to spend approximately 5–7 hours per week online on the following activities:

- Interactive lessons that include a mixture of instructional videos and tasks
- Assignments in which you apply and extend learning in each lesson
- Assessments, including quizzes, tests, and cumulative exams

## Communication

Your teacher will communicate with you regularly through discussions, email, chat, and system announcements. You will also communicate with classmates, either via online tools or face to face, as you collaborate on projects, ask and answer questions in your peer group, and develop your speaking and listening skills.

## Grading Policy

You will be graded on the work you do online and the work you submit electronically to your teacher. The weighting for each category of graded activity is listed below.

Grading Category	Weight
Lesson Quizzes	30%
Unit Tests	30%
Cumulative Exams	20%
Assignments	20%

## Scope and Sequence

When you log into Edgenuity, you can view the entire course map—an interactive scope and sequence of all topics you will study. The units of study are summarized below:

**Unit 1:** Congruence, Proof, and Constructions

**Unit 2:** Similarity, Proof, and Trigonometry

**Unit 3:** Similarity, Proof, and Trigonometry (continued)

**Unit 4:** Extending to Three Dimensions

**Unit 5:** Connecting Algebra and Geometry Through Coordinates

**Unit 6:** Circles With and Without Coordinates

**Unit 7:** Applications of Probability