

Mathematics 7

Course Overview and Syllabus

Course Number: MA3107

Grade Level: 7

Prerequisite Courses: Math 6

Credits: 1.0

Course Description

This course begins with an in-depth study of proportional reasoning where students utilize concrete models such as bar diagrams and tables to increase and develop conceptual understanding of rates, ratios, proportions, and percentages. Students build on their proportional reasoning to solve problems about scale drawings by relating the corresponding lengths between objects. Students' number fluency and understanding of the rational number system are extended as they perform operations with signed rational numbers embedded in real-world contexts. In statistics, students develop meanings for representative samples, measures of central tendency, variation, and the ideal representation for comparisons of given data sets. Students develop an understanding of both theoretical and experimental probability. Throughout the course, students build fluency in writing expressions and equations that model real-world scenarios. They apply their understanding of inverse operations to solve multistep equations and inequalities. The course concludes with a geometric analysis of angle relationships, area, and volume of both two- and three-dimensional figures.

Course Objectives

Throughout the course, you will meet the following goals:

- Apply mathematical reasoning skills and statistical analysis to solve real-world problems.
- Effectively translate between graphic, numeric, symbolic, and verbal representations.
- Learn to select and use appropriate mathematical knowledge when investigating problems.
- Apply proportional reasoning, utilizing multiplication and division to solve problems with ratios, rates, and scale factors.
- Develop a probability model comparing and contrasting theoretical and experimental probabilities.
- Demonstrate an understanding of the meanings and uses for variables in mathematical problems.
- Work with two- and three-dimensional figures to solve problems involving area, surface area, and volume.

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, e-mail, 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
Quiz	20%
Test	30%
Exam	20%
Assignment	20%
Additional	0%
Project	10%

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: Proportional Relationships

Unit 2: Percents

Unit 3: Operations with Integers

Unit 4: Operations with Rational Numbers

Unit 5: Probability

Unit 6: Sampling and Comparing Populations

Unit 7: Expressions

Unit 8: Equations

Unit 9: Inequalities

Unit 10: Two-Dimensional Geometry

Unit 11: Three-Dimensional Geometry