

# Mathematics I

## Syllabus

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**Grade level:** 9–12

**Prerequisite Courses:** Math 8

**Credits:** 1.0

### Course Description

This course formalizes and extends middle-school mathematics, deepening students' understanding of linear relationships. The course begins with a review of relationships between quantities, building from unit conversion to a study of expressions, equations, and inequalities. Students contrast linear and exponential relationships, including a study of sequences, as well as applications such as growth and decay. Students review one-, two-, and multi-step equations, formally reasoning about each step using properties of equality. Students extend this reasoning to systems of linear equations. Students use descriptive statistics to analyze data before turning their attention to transformations and congruency theorems. Equations and figures in the coordinate plane assist in connecting Algebra and Geometry through coordinates. The structure and content of this course naturally guides students to experience mathematics as a rational, beneficial subject which challenges students to critically think through problem situations.

### Course Objectives

Throughout the course, you will meet the following goals:

- Analyze and interpret the structure of expressions and write expressions in equivalent forms to solve problems
- Communicate effectively using graphic, numeric, symbolic, and verbal representations
- Recognize the graph of given data as being linear or exponential
- Solve equations and inequalities in one variable and represent and solve equations and inequalities graphically
- Create and solve equations that describe numbers or relationships
- Model and solve problems with linear systems graphically

## 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   | 20%    |
| Unit Tests       | 30%    |
| Cumulative Exams | 20%    |
| Assignments      | 20%    |
| Projects         | 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:** Relationships Between Quantities

**Unit 2:** Linear and Exponential Relationships: Part One

**Unit 3:** Linear and Exponential Relationships: Part Two

**Unit 4:** Linear and Exponential Relationships: Part Three

**Unit 5:** Reasoning with Equations: Part One

**Unit 6:** Reasoning with Equations: Part Two

**Unit 7:** Descriptive Statistics

**Unit 8:** Congruence, Proof, and Constructions: Part One

**Unit 9:** Congruence, Proof, and Constructions: Part Two

**Unit 10:** Connecting Algebra and Geometry Through Coordinates