



## GED Math Prep Course Description

### Chapter 1: Fractions and Decimals

The course starts by reviewing concepts and skills in working with fractions and decimals. Specifically, students will learn how to convert fractions to decimals and vice versa. Next students will learn how to multiply and divide fractions to including mixed numbers. Lastly, the steps on how to find the LCM/LCD will be explained allowing students to add and subtract fractions.

Sections:

- Introduction to Fractions and Decimals
- Least Common Multiple/Denominator
- Multiplying and Dividing Fractions
- Adding and Subtracting Fractions

### Chapter 2: Positive and Negative Numbers

This chapter focuses on getting the student to master working with the positive and negative numbers (also called Real Numbers). Students learn the different type of numbers that make up the Real Number system. The rules of integers will be reinforced through many practice examples.

Sections:

- Real Numbers/Simplifying Variable Expressions
- Real Number System
- Adding Real Numbers
- Subtracting Real Numbers
- Multiplying and Dividing Real Numbers

### Chapter 3: Order of Operations and Variables

This chapter introduces students to basic terms and concept used in Algebra. Time is taken to ensure the student understands basic number operations, order of operations, variables and their applications. Also a section explains the some key phrases in the language of algebra and how to translate a verbal phrase into an algebraic phrase.

Sections:

- Number Operations
- Variables
- Order of Operations
- Translating Verbal and Algebraic Phrases



#### Chapter 4: Simplifying Algebraic Expressions

Students will learn how to apply the Distributive property and simplify variable expressions by combining like terms. Special emphasis is placed on know how to determine when terms are “like terms.” Many examples are explained as simplifying variable expressions is critical to understanding other areas of algebra.

Sections:

- Distributive Property
- Simplifying by Combining Like Terms

#### Chapter 5: Solving Equations

The chapter breaks down the steps to solve multi-step linear equations. Students will build up their skills as they progress from one and two-step equations to more advance equations. Core concepts involved will be reviewed to include the distributive property and combining like terms.

Sections:

- Basic Concepts of Equations/Inequalities/Solutions
- One Step Equations
- Solving Two Step Equations
- Solving Multi-Step Equations
- Formulas and Literal Equations

#### Chapter 6: Slope and Graphing Lines

This very important chapter walks the student step-by-step to master how to graph linear equations. Concepts involving the coordinate plane slope and methods to graph lines are thoroughly reviewed and introduced. The second part of the chapter will teach students how to find the equation of a line using various methods and techniques. Lastly students will apply their knowledge of linear equations to finding the best fitting lines, linear models and word problems.

Sections:

- Graphing Lines with One Variable
- Graphing Lines with Two Variables
- The Slope of a Line
- Slope Intercept Method
- XY Intercept Method
- Finding the Equation of a Line using the  $y = mx + b$  method
- Find the Equation of a Line- Point Slope Formula
- Find the Equation of a Line- Given Slope and Point
- Find the Equation of a Line- Given Two Points
- Finding the Best Fitting Line
- Linear Models/Word Problems



### **Chapter 7: Understanding Inequalities**

Students use their skills to solve equations to solve linear inequalities. Basic concepts and terms are introduced first along with how to graph inequalities. A special emphasis is placed on the difference between equations and inequalities.

Sections:

- Basic Concepts of Equations/Inequalities/Solutions
- Linear Inequalities
- Compound Inequalities

### **Chapter 8: Powers and Exponents**

This chapter covers all the rules the student will need to work with powers and exponents in Algebra. Also, important applications of these rules are covered to include scientific notation, compound interest and exponential growth and decay.

Sections:

- Product and Power Rules of Exponents
- Negative and Zero Exponents Rules
- Division Rules of Exponents
- Scientific Notation
- Compound Interest
- Exponential Growth and Decay

### **Chapter 9: Percent, Rates, Ratio and Proportions**

The chapter goes over each of the specific concepts of ratios and proportions, percent, variation. A strong emphasis is placed on word problems and practical applications of the topics. Also, a section is dedicated to explain how to work with variable rational expressions.

Sections:

- Ratio and Proportions
- Understanding Percent
- Direct and Inverse Variation
- Simplifying Rational Expressions



### **Chapter 10: Systems and Basic Matrix Operations**

Understanding systems and the methods to solve them are vital in Algebra. This chapter introduces/reviews techniques to solve linear systems. Lastly, the topic of matrices will be introduced. Students will understand the “real world” applications of matrices and basic matrix operations.

Sections:

- Solving Systems by Graphing
- Solving Systems Substitution Method
- Solving Systems by Elimination/Linear Combination
- Introduction to Matrices
- Basic Matrix Operations

### **Chapter 11: Geometry**

Understanding basic geometry concepts is critical to passing the GED. The chapter covers some of the most common geometry topics that a GED student should know. These would include circles, circumference, area, surface area, volume, Distance and Mid-Point Formula. Also a section deals with Right Triangles and the Pythagorean Theorem.

Sections:

- Circles: Area and Circumference
- Area of Basic Figures
- Surface Area of Basic Figures
- Volume of Basic Figures
- The Distance and Mid-Point Formula
- The Pythagorean Theorem