

# HSE or GED Math Prep

This goal contains the following study paths:

1. K-8<sup>th</sup> Grade Math (HSE or GED Prep)
2. 9<sup>th</sup>-12<sup>th</sup> Grade Math (HSE or GED Prep)

Students can access the study paths in the displayed order. Only 'K-8<sup>th</sup> Grade Math' is unlocked by default, but the next study path in the sequence will automatically be unlocked when students reach their target score (90).



## STUDY PATH 1: K-8<sup>TH</sup> GRADE MATH



### Unit 1: Whole Numbers

#### Introduction to Whole Numbers

- Place Value and Names for Whole Numbers
- Rounding Whole Numbers
- Comparing Whole Numbers

#### Adding and Subtracting Whole Numbers

- Adding Whole Numbers and Applications
- Subtracting Whole Numbers and Applications
- Estimation

#### Multiplying and Dividing Whole Numbers

- Multiplying Whole Numbers and Applications
- Dividing Whole Numbers and Applications



### Unit 2: Fractions and Mixed Numbers

#### Introduction to Fractions and Mixed Numbers

- Introduction to Fractions and Mixed Numbers
- Proper and Improper Fractions
- Factors and Primes
- Simplifying Fractions
- Comparing Fractions

#### Multiplying and Dividing Fractions and Mixed Numbers

- Multiplying Fractions and Mixed Numbers

#### Adding and Subtracting Fractions and Mixed Numbers

- Adding Fractions and Mixed Numbers



### Unit 3: Decimals

#### Introduction to Decimals

- Decimals and Fractions

#### Decimal Operations

- Adding and Subtracting Decimals
- Multiplying and Dividing Decimals



### Unit 4: Ratios, Rates, and Proportions

#### Ratios and Rates

- Simplifying Ratios and Rates

#### Proportions

- Understanding Proportions



### Unit 5: Percents

#### Introduction to Percents

- Convert Percents, Decimals, and Fractions



### Unit 6: Measurement

#### U.S. Customary Units of Measurement

- Length
- Weight
- Capacity

#### Metric Units of Measurement

- The Metric System
- Converting Within the Metric System
- Using Metric Conversions to Solve Problems

#### Temperature

- Temperature Scales



### Unit 7: Geometry

#### Basic Geometric Concepts and Figures

- Figures in 1 and 2 Dimensions
- Properties of Angles
- Triangles
- The Pythagorean Theorem

#### Perimeter, Circumference, and Area

- Quadrilaterals
- Perimeter and Area

#### Volume of Geometric Solids

- Solids



### Unit 8: Concepts in Statistics

#### Statistical Graphs and Tables

- Graphing Data
- Other Types of Graphs

#### Measures of Center

- Measures of Center

#### Graphical Representations

- Use and Misuse of Graphical Representations

#### Probability

- Probability



### Unit 9: Real Numbers

#### Introduction to Real Numbers

- Variables and Expressions
- Integers
- Rational Real Numbers

#### Operations With Real Numbers

- Adding Integers
- Adding Real Numbers
- Subtracting Real Numbers
- Multiplying and Dividing Real Numbers

#### Properties of Real Numbers

- Associative, Commutative, and Distributive Properties

#### Simplifying Expressions

- Order of Operations



### Unit 10: Solving Equations and Inequalities

#### Solving Equations

- Solving One-Step Equations Using Properties of Equality
- Solving Multi-Step Equations
- Special Cases and Applications
- Formulas

#### Solving Inequalities

- Solving One-Step Inequalities

*continued...*

## Unit 11: Exponents and Polynomials

### Integer Exponents

- Exponential Notation
- Simplify by Using the Product, Quotient, and Power Rules
- Products and Quotients Raised to Powers
- Scientific Notation

## Unit 13: Graphing

### Graphs and Applications

- The Coordinate Plane
- Graphing Linear Equations

### Slope and Writing the Equation of a Line

- Finding the Slope of a Line

## Unit 14: Systems of Equations and Inequalities

### Graphing Systems of Equations and Inequalities

- Graphing Systems of Linear Equations
- Graphing Systems of Inequalities

### Algebraic Methods to Solve Systems of Equations

- The Substitution Method
- The Elimination Method

### Systems of Equations in Three or More Variables

- Solving Systems of Three Variables

## Unit 16: Radical Expressions and Quadratic Equations

### Introduction to Roots and Rational Exponents:

- Roots
- Squares, Cubes, and Beyond
- Rational Exponents

### Operations With Radicals

- Multiplying and Dividing Radical Expressions
- Adding and Subtracting Radicals
- Multiplication of Multiple Term Radicals
- Rationalizing Denominators

## Unit 17: Functions

### Introduction to Functions

- Identifying Functions

### Using Functions

- Evaluating Functions
- Graphing Types of Functions
- Finding Domain and Range

Topics in study path 2 that are also covered in study path 1 are underlined.

## STUDY PATH 2: 9<sup>TH</sup>-12<sup>TH</sup> GRADE MATH

## Unit 7: Geometry

### Basic Geometric Concepts and Figures

- Figures in 1 and 2 Dimensions
- Properties of Angles
- Triangles

### Perimeter, Circumference, and Area

- Circles

### Volume of Geometric Solids

- Solids

## Unit 8: Concepts in Statistics

### Statistical Graphs and Tables

- Graphing Data
- Other Types of Graphs

### Measures of Center

- Measures of Center

### Graphical Representations

- Use and Misuse of Graphical Representations

## Unit 10: Solving Equations and Inequalities

### Solving Equations

- Solving One-Step Equations Using Properties of Equality
- Solving Multi-Step Equations
- Special Cases and Applications
- Formulas

### Solving Inequalities

- Solving One-Step Inequalities
- Multi-Step Inequalities

### Compound Inequalities and Absolute Value

- Compound Inequalities
- Equations and Inequalities and Absolute Value

## Unit 11: Exponents and Polynomials

### Polynomials With Single Variables

- Introduction to Single Variable Polynomials
- Adding and Subtracting Polynomials
- Multiplying Polynomials
- Multiplying Special Cases
- Dividing by Binomials and Polynomials

### Polynomials With Several Variables

- Simplifying and Evaluating Polynomials With More Than One Term

## Unit 12: Factoring

### Introduction to Factoring

- Greatest Common Factor

### Factoring Polynomials

- Factoring Trinomials
- Factoring: Special Cases
- Special Cases: Cubes

### Solving Quadratic Equations

- Solve Quadratic Equations by Factoring

## Unit 13: Graphing

### Graphs and Applications

- Graphing Linear Equations

### Slope and Writing the Equation of a Line

- Finding the Slope of a Line

## Unit 14: Systems of Equations and Inequalities

### Graphing Systems of Equations and Inequalities

- Graphing Systems of Linear Equations
- Graphing Systems of Inequalities

### Algebraic Methods to Solve Systems of Equations

- The Substitution Method
- The Elimination Method

### Systems of Equations in Three or More Variables

- Solving Systems of Three Variables

## Unit 15: Rational Expressions

### Rational Equations

- Solving Rational Equations and Applications

### Formulas and Variation

- Rational Formulas and Variation

*continued...*



## Unit 16: Radical Expressions and Quadratic Equations

### Introduction to Roots and Rational Exponents:

- [Roots](#)
- [Squares, Cubes, and Beyond](#)
- [Rational Exponents](#)

### Radical Equations

- Solving Radical Equations

### Solving Quadratic Equations

- The Quadratic Formula



## Unit 17: Functions

### Introduction to Functions

- [Identifying Functions](#)

### Using Functions

- [Graphing Types of Functions](#)
- [Finding Domain and Range](#)



## Unit 18: Exponential and Logarithmic Functions

### Exponential Functions

- Introduction to Exponential Functions

### Logarithmic Functions

- Introduction to Logarithmic Functions
- Properties of Logarithmic Functions

### Natural Logarithms

- Introduction to Natural and Common Logarithms

### Logarithmic and Exponential Equations

- Solving Exponential and Logarithmic Equations
- Mathematical Modeling With Exponential and Logarithmic Functions