

## Foundation Math II

**COURSE DESCRIPTION:** Students build and reinforce foundational math skills typically found in sixth through eighth grade, achieving the computational skills and conceptual understanding needed to undertake high school math courses with confidence. Carefully paced, guided instruction is accompanied by interactive practice that is engaging and accessible. Summative assessments track progress and skill development. This course is appropriate for use as remediation at the high school level or as a bridge to high school.

**PREREQUISITES:** Teacher/school counselor recommendation; Math Foundations I is not required.

**COURSE LENGTH:** Two Semesters

**REQUIRED TEXT:** None

**MATERIALS LIST:** None

### COURSE OUTLINE:

#### Semester 1

##### Unit 1: Numbers and Operations

- Rounding, Estimating, and Range
- Number Operations
- Number Sense: Squares and Square Roots
- Problem Solving: The 5-Step Plan
- Problem Solving: Application
- Multiplication: Properties
- Multiplication: Decimals
- Division
- Number Sense: Factors
- Fractions: Equivalent Fractions
- Fractions: Estimating with Fractions
- Fractions: Multiplying and Dividing

##### Unit 2: Data, Measurement, and Geometry

- Organizing Data

- Graphing Data
- Metric Measures
- Customary Measures
- Other Measures
- Plane Geometry
- Polygons
- Space Figures
- Geometric Measurements
- Circles

### **Unit 3: Ratio, Proportion, and Properties**

- Ratio and Proportion
- Percent
- Probability: Predicting Outcomes
- Integers
- Coordinate Graphing
- Number Values
- Decimal Number Concepts

### **Unit 4: Numbers and Properties**

- Number Operations
- Decimal Number Concepts
- Number Theory
- Problem Solving: Decimals
- Problem Solving: Number Theory
- Fraction Concepts
- Fraction Operations
- Problem Solving: Fractions
- Ratio and Proportion
- Problem Solving: ratio, Rates, Proportions
- Probability: Properties
- Percent Concepts
- Problem Solving: Percents

**Unit 5: Concepts in Algebra**

- Algebra Concepts
- Variables and Equations
- Equations and Inequalities
- Expressions and Equations
- Problem Solving: Equations
- Problem Solving: Measurement

**Unit 6: Geometry and Statistics**

- Geometric Concepts
- Plane Figures
- Motion Geometry
- Space Figures: A Review
- Statistics
- Graphs and Plots

**Semester 2**

**Unit 1: Operations and Real Numbers**

- Integers
- Adding and Subtracting Integers
- Multiplying and Dividing Integers
- Coordinate Graphing
- Number Concepts Review
- Properties
- Problem Solving: The 5-Step Plan
- Basic Operations with Rational Numbers
- Basic Operations with Fractions

**Unit 2: Ration, Proportion, and Probability**

- Ratio and Proportion
- Problem Solving: Ratio and Proportion
- Percent Concepts
- Percent: Practical Uses

- Probability

### **Unit 3: Concepts in Algebra**

- Algebra: Expression, Equations, Order of Operation
- Algebra: Simplifying
- Algebra: Equalities and Inequalities
- Algebra: Multi-Step Equalities and Inequalities
- Algebra: Translating Data to Equations

### **Unit 4: Geometric Concepts**

- Geometric Concepts: Points, Lines, Rays, and Angles
- Plane Figure: Polygons and Circles
- Space Figure: Polyhedrons, Cones, and Spheres
- Geometric Measurement
- Square Roots and Triangles
- Coordinate Graphing
- Coordinate Graphing to Solve Problems

### **Unit 5: Expressions and Equations**

- Number Notation
- Expressions and Equations
- Properties Review
- Simplifying Expressions
- Solving Equations using Properties
- Solving Equations with Multiplication and Division

### **Unit 6: Elements of Algebra**

- Integers
- Equations with Integers by Adding and Subtracting
- Equations with Integers by Multiplying and Dividing
- Inequalities
- Solving Inequalities with Inverse Operations
- Solving Inequalities with Multiplication and Division
- Factors and Exponents
- Rational Numbers

- Equations-Inequalities by Adding and Subtracting
- Equations-Inequalities by Multiplying and Dividing
- Graphing on the Coordinate Plane
- Ratio and Proportion

**Unit 7: Geometry**

- Algebra with Geometry
- Polygons and Circles
- Area and Volume
- Special Triangles
- Statistics and Graphing