Math Foundations I offers a structured remediation solution based on the NCTM Curricular Focal Points and is designed to expedite student progress in acquiring 3rd- to 5th-grade skills. The course is appropriate for use as remediation for students in grades 6 to 12. When used in combination, Math Foundations I and Math Foundations II (covering grades 6 to 8) effectively remediate computational skills and conceptual understanding needed to undertake high school–level math courses with confidence.

Math Foundations I empowers students to progress at their optimum pace through over 80 semester hours of interactive instruction and assessment spanning 3rd- to 5th-grade math skills. Carefully paced, guided instruction is accompanied by interactive practice that is engaging and accessible. Formative assessments help students to understand areas of weakness and improve performance, while summative assessments chart progress and skill development. Early in the course, students develop general strategies for honing their problem-solving skills. Subsequent units provide a problem-solving strand that asks students to practice applying specific math skills to a variety of real-world contexts.

This course is built to state standards and informed by the National Council of Teachers of Math (NCTM) standards and Curricular Focal Points for Prekindergarten through Grade 8 Mathematics: A Quest for Coherence.

Length: Two Semesters

Unit 1: Introduction to Problem Solving

- Building Basic Word Problems
- A Four-Step Approach
- Too Much or Too Little Information
- Draw a Diagram
- Use a Model or Act it Out
- Make a List
- Build a Chart and Find a Pattern
- Guess and Check
- Work Backward
- Building Equations
- Deductive Reasoning
- Inductive Reasoning
- Logic Puzzles
- Problem Solving
- Introduction to Problem Solving Wrap-Up

Unit 2: Multiplication

- Review of Addition

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- Review of Subtraction
- Introduction to Multiplication
- Multiplying by 0 and 1
- Multiplication Arrays
- Multiplication Facts with Table
- Two-Digit by One-Digit Multiplication
- Two-Digit by Two-Digit Multiplication
- Three-Digit by One-Digit Multiplication
- Three-Digit Multiplication
- Multiplying Three or More Factors
- Problem Solving
- Multiplication Wrap-Up

Unit 3: Division

- Introduction to Division
- Division with 0 and 1
- Division Facts with Table
- Understanding Remainders
- Introduction to Long Division
- Long Division with Remainders
- Long Division with Two-Digit Divisors
- Long Division with Three-Digit Divisors
- Checking Division
- Problem Solving
- Division Wrap-Up

Unit 4: Multiplication and Division Concepts

- Properties of Multiplication
- Place Value
- Inverse Operations
- Rounding to the 10's, 100's, and 1000's
- Estimating Products
- Prime Numbers
- Factors
- Common Factors
- Prime Factorization
- Multiples
- Grouping with Parentheses
- Multiplying by 10 and 100
- Problem Solving
- Multiplication and Division Concepts Wrap-Up

Unit 5: Fractions

- The Meaning of Fractions
- The Meaning of Fractions: Part of a Group

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- Fractions with Zeros
- Estimating Fractions
- Locating Fractions on a Number Line
- Comparing Like Fractions
- Equivalent Fractions
- Simplifying Fractions
- Finding Common Denominators
- Comparing Unlike Fractions
- Fractions of Whole Numbers
- Mixed Numbers and Improper Fractions
- Comparing and Ordering Mixed Numbers
- Converting Mixed Numbers and Improper Fractions
- Problem Solving
- Fractions Wrap-Up

Unit 6: Decimals

- The Meaning of Decimals
- Place Value with Decimals
- Locating Decimals on a Number Line
- Comparing and Ordering Decimals
- Rounding with Decimals
- Problem Solving
- Decimals Wrap-Up

Unit 7: Operations with Fractions and Decimals

- Word Problems With Fractions
- Adding and Subtracting Like Fractions
- Adding and Subtracting Like Fractions in Word Problems
- Adding and Subtracting Unlike Fractions
- Adding and Subtracting Unlike Fractions in Word Problems
- Adding Mixed Numbers
- Subtracting Mixed Numbers
- Adding and Subtracting Fractions and Whole Numbers
- Adding and Subtracting Decimals
- Decimals and Money
- Adding and Subtracting Decimals in Word Problems
- Estimating Sums and Differences with Decimals
- Problem Solving
- Operations with Fractions and Decimals Wrap-Up

Unit 8: 2-D Geometry

- Points, Segments, Rays, and Lines
- Identifying Parts of Angles
- Classifying Angles
- Measuring Angles with a Protractor

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- Parallel, Intersecting, and Perpendicular Paths
- Open and Closed Figures
- Identifying Polygons
- Classifying Triangles
- Classifying Quadrilaterals
- Identifying Parts of Circles
- Lines of Symmetry
- Sliding, Turning, and Flipping Shapes
- Congruence and Similarity
- Using Geometric Vocabulary
- Problem Solving
- 2-D Geometry Wrap-Up

Unit 9: Perimeter and Area

- Perimeter
- Introduction to Area
- Area of Rectangles and Squares
- Area of Parallelograms
- Area of Triangles
- Problem Solving
- Perimeter and Area Wrap-Up

Unit 10: 3-D Geometry

- Three Dimensions
- Introduction to Volume
- Volume of Rectangular Solids
- Polyhedra
- Surface Area
- Estimation and Units
- Problem Solving
- 3-D Geometry Wrap-Up

Unit 11: Data Analysis

- Types of Data
- Frequency Tables, Line Plots, and Bar Graphs
- Stem and Leaf Plots and Histograms
- Data Pairs and Double-Bar Graphs
- Data Pairs and Scatter Plots
- Problem Solving
- Data Analysis Wrap-Up

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