Fundamental Math explores foundational concepts in math. Students master basic skills and extend their knowledge as they prepare for more advanced work. Topics include basic number concepts such as whole numbers, counting, place value, rounding, exponents, and negative numbers; addition and subtraction; and multiplication and division. The course also covers fractions, operations with fractions, decimals, percents, ratios, problem solving, basic concepts in geometry, and measuring shapes.

This course is built to National Council of Teachers of Mathematics (NCTM) standards and is aligned to state standards.

Length: Two Semesters

Unit 1: Basic Number Concepts

- Whole Numbers
- Reading and Writing Whole Numbers
- Odd and Even Numbers
- Using Odd and Even Numbers
- Counting by 2's, 3's, 4's, 5's and 10's
- Number Patterns
- Putting Numbers in Order
- Identifying Greater than and Less than
- Introduction to Number Lines and Inequalities
- Place Value
- Place Value Beyond a Thousand
- Standard, Expanded and Word Form
- Ordinal Numbers
- Basic Number Concepts Wrap-Up

Unit 2: Advanced Number Concepts

- Properties of Addition
- Properties of Multiplication
- Rounding to the 10's, 100's, and 1000's
- Rounding to the 10,000's, 100,000's and 1,000,000's
- Grouping with Parentheses
- Rounding with a Number Line
- Prime Numbers
- Inverse Operations
- Exponents
- Square Numbers
- Roman Numerals
- Negative Numbers
- Advanced Number Concepts Wrap-Up

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Unit 3: Addition and Subtraction

- Adding Whole Numbers
- Addition Facts with Table
- Column Addition
- Addition with Regrouping
- Horizontal Addition
- Subtracting Whole Numbers
- Subtraction Facts with Table
- Column Subtraction
- Subtraction Regrouping for Two-Digit Numbers
- Subtraction Regrouping for Three-Digit Numbers
- Adding and Subtracting Zero
- Addition and Subtraction Fact Families
- Estimating Sums
- Estimating Differences
- Addition and Subtraction with Variables
- Addition and Subtraction Wrap-Up

Unit 4: Multiplication and Division

- 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
- 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
- Multiplication and Division Wrap-Up

Unit 5: Multiplication and Division Concepts

- Factors
- 2, 4 and 8 as Factors
- 3, 6 and 9 as Factors
- 5 and 10 as Factors

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- Common Factors
- Prime Factorization
- Multiples
- Multiplying by 10 and 100
- Dividing by 10 and 100
- Powers of Ten
- Multiplying and Dividing by Powers of Ten
- Estimating Products
- Estimating Quotients
- Multiplication and Division Fact Families
- Multiplication and Division with Variables
- Multiplication and Division Concepts Wrap-Up

Unit 6: Fractions

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

Unit 7: Semester Wrap-Up

Unit 8: Operations with Fractions

- 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
- Multiplying Fractions
- Multiplying Fractions in Word Problems
- Multiplying Mixed Numbers
- Operations with Fractions Wrap-Up

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Unit 9: Decimals, Percents, and Ratios

- The Meaning of Decimals
- Place Value with Decimals
- Locating Decimals on a Number Line
- Comparing and Ordering Decimals
- Rounding with Decimals
- The Meaning of Percent
- Estimating Percent
- Working with Percents
- Relating Fractions, Decimals, and Percents
- Common Fractions, Decimals, and Percents
- Introduction to Ratios
- Decimals, Percents, and Ratios Wrap-Up

Unit 10: Operations with Decimals

- Adding and Subtracting Decimals
- Decimals and Money
- Multiplying Decimals
- Multiplying Decimals and Adding Zeros
- Repeating Decimals
- Dividing Decimals
- Adding and Subtracting Decimals in Word Problems
- Word Problems with Decimals - All Operations
- Estimating Sums and Differences with Decimals
- Estimating Products and Quotients of Decimals
- Operations with Decimals Wrap-Up

Unit 11: Problem Solving

- Building Basic Word Problems
- A Four-Step Approach
- Too Much or Too Little Information
- Choosing the Operation in Word Problems
- 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 Wrap-Up

Unit 12: Basic Concepts in Geometry

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- Points, Segments, Rays, and Lines
- Identifying Parts of Angles
- Classifying Angles
- Measuring Angles with a Protractor
- 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
- Basic Concepts in Geometry Wrap-Up

Unit 13: Measuring Shapes

- Perimeter
- Introduction to Area
- Area of Rectangles and Squares
- Area of Parallelograms
- Area of Triangles
- Introduction to Volume
- Volume of Rectangular Solids
- The Number Pi
- Measuring Shapes Wrap-Up

Unit 14: Preparing for the Semester Exam

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