CORE BODY OF KNOWLEDGE

MATH

GRADE 6

For each of the sections that follow, students may be required to understand, apply, analyze, evaluate or create the particular concepts being taught.

Course Description

The 6th Grade enVision Curriculum focuses on coherent, rigorous lessons that connect learning with the 8 Mathematical Principles. Throughout the course of each math class, your students will be able to:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

STUDY SKILLS:

- Complete nightly assignments
- Practice math facts
- Participate in class
- Self-assess throughout lessons
- Utilize graphic organizers
- Maintain assignment book
- Acquire new vocabulary

MAJOR UNIT THEMES:

14 Topics -- 5 Units

Topics 1-3: Expressions and Equations

1. Variables and Expressions

- Exponents
- Properties of Operations
- Order of Operations
- The Distributive Property
- Evaluating Numerical Expressions
- Using Variables to Write Expressions
- Parts of an Expression

- Evaluating Algebraic Expressions
- Using Expressions to Describe Patterns
- Simplifying Algebraic Expressions
- Writing Equivalent Expressions
- Applying the Distributive Property
- Problem Solving: Make an Organized List

2. Equations and Inequalities

- Understanding Equations
- Properties of Equalities
- Solving Addition and Subtraction Equations
- Problem Solving: Draw a Picture and Write an Equation
- Solving Multiplication and Division Equations
- Solving Equations with Fractions
- Writing Inequalities
- Solving Inequalities
- Problem Solving: Draw a Picture and Write an Equation

3. Patterns and Equations

- Dependent and Independent Variables
- Patterns and Equations
- More Patterns and Equations
- Problem Solving: Use Reasoning

Topics 4-8: The Number System

4. Decimals

- Estimating Sums and Differences
- Evaluating Addition and Subtraction Expressions
- Solving Addition and Subtraction Equations
- Estimating Products
- Multiplying Decimals
- Problem Solving: Make a Table and Look for a Pattern

5. Dividing Whole Numbers and Decimals

- Estimating Quotients: 2-Digit Divisors
- Dividing Whole Numbers: 2-Digit Divisors
- More Dividing Whole Numbers
- Dividing Decimals by a Whole Number
- Dividing Decimals
- Evaluating Expressions with Decimals
- Solving Equations with Decimals
- Problem Solving: Multiple-Step Problems

6. Dividing Fractions

- Greatest Common Factor
- Least Common Multiple
- Understand Division of Fractions
- Dividing Whole Numbers by Fractions
- Modeling Division of Fractions
- More Dividing Fractions
- Estimating Mixed-Number Quotients
- Dividing Mixed Numbers
- Evaluating Expressions with Fractions
- Solving Equations with Fractions
- Problem Solving: Look for a Pattern

7. Integers and Other Rational Numbers

- Understanding Integers
- Comparing and Ordering Integers
- Absolute Value
- Rational Numbers on a Number Line
- Comparing and Ordering Rational Numbers
- Problem Solving: Use Reasoning

8. Coordinate Geometry

- Integers on the Coordinate Plane
- Rational Numbers on the Coordinate Plane
- Distance on the Coordinate Plane
- Polygons on the Coordinate Plane
- Graphing Equations
- More Graphing Equations
- Multiple-Step Problems

Topics 9-11: Ratios and Proportional Relationships

9. Ratios

- Understanding Ratios
- Equivalent Ratios
- Modeling Ratios
- Using Ratio Tables
- Ratios and Graphs
- Problem Solving: Draw a Picture

10. Rates

- Understanding Rates
- Comparing Rates
- Unit Rates

- Unit Price
- Constant Speed
- Converting Customary Units
- Converting Metric Units
- Problem Solving: Write an Equation

11. Percents

- Understanding Percent
- Fractions, Decimals, and Percents
- Percents Greater than 100 or Less Than 1
- Estimating Percent
- Finding the Percent of a Number
- Finding the Whole
- Problem Solving: Reasonableness

Topics 12-13: Geometry

12. Area

- Area of Rectangles
- Area of Parallelograms and Rhombuses
- Area of Triangles
- Area of Special Quadrilaterals
- Finding Areas of Polygons
- Areas of Polygons on the Coordinate Plane
- Problem Solving: Use Objects

13. Surface Area and Volume

- Solid Figures and Nets
- Surface Area of Prisms and Pyramids
- Modeling Volume
- Volume with Fractional Edge Lengths
- Problem Solving: Use Objects and Reasoning

Topic 14: Statistics and Probability

14. Statistics

- Statistical Questions
- Looking for Data Sets
- Mean
- Median, Mode, and Range
- Frequency Tables and Histograms
- Box Plots
- Measures of Variability
- Appropriate Use of Statistical Measures
- Summarizing Data Distributions

- Problem Solving: Try, Check, Revise

MATERIALS:

- enVision Student Textbook
- enVision Online
- enVision Practice/Reteach Workbook
- Student Manipulative
- Center Books
- Teacher Resource Manuals
- 8 Mathematical Standards Poster

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