



COVINGTON LATIN SCHOOL

Achieve here. Excel here. Belong here.

PREP 7 MATH

Textbook:

Mathematics, Course 2
Bennett, Burger, Chard, Hall, Kennedy, Renfro, Roby, Scheer, Waits
Holt McDougal
2010
ISBN: 978-0-03-099429-6

Prerequisites:

Students are expected to have rapid recall knowledge of addition, subtraction, multiplication and division facts using positive integers. They should also have been exposed to the four operations applied to fractions and decimals, have worked with percents, and have been exposed to, but perhaps not mastered, various other age appropriate topics in mathematics.

Course Description:

In this course students will receive training in the four operations with fractions, decimals, and integers (positive and negative). They will work with percents, proportions, basic two- and three-dimensional geometry, and introductory algebraic equations. They will learn about different displays for organizing data and basic probability.

Calculator Policy:

No calculator will be permitted.

Course Goals:

1. To introduce students to a new level of mathematics while reinforcing basic skills.
2. To provide opportunity for introduction, reinforcement, and review of mathematical concepts.
3. To develop methods for dealing with elementary mathematical situations so the student can apply these in more complex situations.
4. To prepare students for Pre-algebra.
5. To enable students to apply mathematics to real world situations.
6. Provide students with a solid foundation in working with numbers (powers, percents, ratios, fractions, decimals, signed numbers, etc.).

Course Objectives: Upon completion of the course, students will be able to:

1. work with integers, fractions, decimals, and percents in the four basic operations.
2. recognize basic algebraic processes and apply them.
3. apply the order of operations for evaluation purposes.
4. order integers, fractions, decimals and percents.
5. identify rates and solve proportions.
6. manipulate the coordinate plane and calculate slope.
7. apply basic geometric principles to everyday situations.
8. work with probability issues and calculate basic statistical measures.
9. find perimeter, circumference, area and volume.

Course Sequence:

1. Chapter 1: Algebraic Reasoning
 - Numbers and Patterns
 - Exponents
 - Scientific Notation
 - Order of Operations
 - Properties of Numbers
 - Variables and Algebraic Expressions
 - Translating Words into Math
 - Simplifying Algebraic Expressions
 - Equations and Their Solutions
2. Chapter 2: Integers and Rational Numbers
 - Integers
 - Adding Integers
 - Subtracting Integers
 - Multiplying and Dividing Integers
 - Prime Factorization
 - Greatest Common Factor
 - Least Common Multiple
 - Equivalent Fractions and Mixed Numbers
 - Equivalent Fractions and Decimals
 - Comparing and Ordering Rational Numbers
3. Chapter 3: Applying Rational Numbers
 - Estimating with Decimals
 - Adding and Subtracting Decimals
 - Multiplying Decimals
 - Dividing Decimals
 - Estimating with Fractions
 - Adding and Subtracting Fractions
 - Adding and Subtracting Mixed Numbers
 - Multiplying Fractions and Mixed Numbers
 - Dividing Fractions and Mixed Numbers
4. Chapter 4: Proportional Relationships
 - Ratios
 - Rates
 - Identifying and Writing Proportions
 - Solving Proportions
 - Customary Measurements
 - Metric Measurements
 - Dimensional Analysis
 - Similar Figures and Proportions
 - Using Similar Figures
 - Scale Drawings and Scale Models
5. Chapter 5: Graphs & Chapters 1 & 2: Basic Equations
 - The Coordinate Plane
 - Interpreting Graphs
 - Functions, Tables, and Graphs
 - Sequences

- Solving Equations by Adding or Subtracting
- Solving Equations by Multiplying or Dividing
- Solving Equations Containing Integers
- 6. Chapter 6: Percents
 - Percents
 - Fractions, Decimals, and Percents
 - Estimating with Percents
 - Percent of a Number
 - Solving Percent Problems
 - Percent of Change
 - Simple Interest
- 7. Chapter 8: Geometric Figures
 - Building Blocks of Geometry
 - Classifying Angles
 - Line and Angle Relationships
 - Properties of Circles
 - Classifying Polygons
 - Classifying Triangles
 - Classifying Quadrilaterals
 - Angles in Polygons
 - Congruent Figures
 - Translations, Reflections, and Rotations
 - Symmetry
- 8. Chapter 9: Measurement: Two-Dimensional Figures
 - Accuracy and Precision
 - Perimeter and Circumference
 - Area of Parallelograms
 - Area of Triangles and Trapezoids
 - Area of Circles
 - Area of Irregular Figures
 - Squares and Square Roots
 - The Pythagorean Theorem
- 9. Chapter 10: Measurement: Three-Dimensional Figures
 - Introduction to Three Dimensional Figures
 - Volume of Prisms and Cylinders
 - Volume of Pyramids and Cones
 - Surface Area of Prisms and Cylinders
 - Surface Area of Pyramids and Cones
 - Changing Dimensions
- 10. Chapter 7: Collecting, Displaying, and Analyzing Data
 - Frequency Tables, Stem-and-Leaf Plots, and Line Plots
 - Mean, Median, Mode, and Range
 - Bar Graphs and Histograms
 - Reading and Interpreting Circle Graphs
 - Box-and-Whisker Plots
 - Line Graphs
 - Choosing an Appropriate Display
 - Populations and Samples
 - Scatter Plots
 - Misleading Graphs

11. Chapter 11: Probability

Probability

Experimental Probability

Find Sample Spaces

Theoretical Probability

Making Predictions

Probability of Independent and Dependent Events

Combinations

Permutations

12. Chapter 12: Multi-Step Equations and Inequalities (if time allows)

Solving Two-Step Equations

Solving Multi-Step Equations

Solving Equations with Variables on Both Sides

Inequalities

Solving Inequalities by Adding or Subtracting

Solving Inequalities by Multiplying or Dividing

Solving Multi-Step Inequalities

Evaluation:

Teacher Discretion