# Prealgebra / 8th Grade Math

## Course Description:

In Thinkwell's Prealgebra, students will develop skills that are foundational to success in Algebra and beyond. They will learn and explore topics including integers, order of operations, algebraic expressions, one and two-step equations, proportions, percents, probability, geometry, and linear equations. Thinkwell's Prealgebra emphasizes conceptualization of key math ideas and making meaning of those ideas given real-world situations.

Prof. Edward Burger presents lessons through approximately 18 hours of video lectures. The student's grade is determined by their scores on quizzes (40%), tests (40%), one midterm exam (10%), and one final exam (10%).

## Prealgebra Overview

- **Principles of Algebra**
  - Expressions and Properties of Numbers
  - Exponents
  - Operations with Integers
  - Equations and Inequalities
- **Rational Numbers**
  - Operations with Rational Numbers
  - Equations with Rational Numbers
  - Solving Two-Step Equations

- **Graphs, Functions, and Sequences**
  - Tables and Graphs
  - Graphing on a Coordinate Plane
  - Functions
  - Equations, Tables, and Graphs
  - Arithmetic Sequences

- **Exponents and Roots**
  - Product and Power Properties of Exponents
  - Integer Exponents
  - Graphing Linear Functions
  - Quotient Properties of Exponents
  - Scientific Notation
  - Square Roots and the Pythagorean Theorem

- **Proportionality and Measurement**
  - Ratios and Proportions
  - Ratios, Rates, and Unit Rates
  - Dimensional Analysis
  - Similar Figures
  - Dilations
  - Indirect Measurement
  - Scale Drawings and Scale Models

- **Percents**
  - Relating Decimals, Fractions, and Percents
  - Finding Percents
  - Percent Increase and Decrease
  - Applications of Percent
  - Simple Interest

- **Foundations of Geometry**
  - Points, Lines, and Angles
  - Triangles
  - Polygons
  - Coordinate Geometry
  - Transformations, Symmetry & Dilations
  - Perimeter, Area, and Volume
  - Circles and Spheres
  - Three-Dimensional Geometry
  - Converting Units of Measurement

- **Data and Statistics**
  - Collecting and Describing Data
  - Samples and Surveys
  - Measures of Central Tendency
  - Data Displays
  - Misleading Graphs and Statistics

- **Multi-Step Equations and Inequalities**
  - Simplifying Algebraic Expressions
  - Solving Multi-Step Equations
  - Solving Literal Equations
  - Solving Inequalities and Systems of Equations
  - Systems of Equations

# Prealgebra Course Information:

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| **Recommended Course Duration** | 36 weeks |
| **Topics** | 93 |
| **Hours of Video Content** | 17+ |
| **Practice Exercise and Worksheet Questions** | 1500+ |
| **Number of Graded Assessments (Quizzes, Tests, & Exams)** | 37 |