# Honors Prealgebra/ 8th Grade Math

## Course Description:

In Thinkwell's Honors 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, linear equations, sequences, and functions. Thinkwell's Honors Prealgebra emphasizes conceptualization of key math ideas and making meaning of those ideas given real-world situations.

Prof. Edward Burger presents lessons through approximately 22 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%).

## Honors Prealgebra/8th Grade Math 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

thinkwell homeschool

- **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

thinkwell🎓homeschool

- **Linear Equations**
  - Graphing Linear Equations
  - Slope of a Line
  - Point-Slope Form
  - Direct Variation
  - Graphing Inequalities
  - Lines of Best Fit

- **Sequences and Functions**
  - Arithmetic and Geometric Sequences
  - Linear Functions
  - Exponential Functions
  - Quadratic Functions
  - Inverse Variation

- **Polynomials**
  - Simplifying Polynomials
  - Adding and Subtracting Polynomials
  - Multiplying Polynomials by Monomials
  - Multiplying Binomials

# Honors Prealgebra Course Information:

| | | |
|---|---|---|
| **Recommended Course Duration** | | 36 weeks |
| **Topics** | | 114 |
| **Hours of Video Content** | | 22+ |
| **Practice Exercise and Worksheet Questions** | | 1500+ |
| **Number of Graded Assessments (Quizzes, Tests, & Exams)** | | |
| | **Quizzes** | 30 |
| | **Tests** | 14 |
| | **Exams** | 2 |

thinkwell homeschool