Course Description – Honors CC Math 8 and Regular Core CC Math 8

Honors and Common Core Math 8

Student Edition: CA Go Math: Middle School Grade 8 (Houghton Mifflin Harcourt)

Course Description: While working at a slower pace, CC Math 8 focuses on **The Number System** (know that there are numbers that are not rational, and approximate them by rational numbers), **Expressions and Equations** (work with radicals and integer exponents, understand the connections between proportional relationships, lines, and linear equations, analyze and solve linear equations and pairs of simultaneous linear equations), **Functions** (define, evaluate, and compare functions, use functions to model relationships between quantities), **Geometry** (understand congruence and similarity using physical models, transparencies, or geometry software, understand and apply the Pythagorean theorem, solve real-world and mathematical problems involving volume of cylinders, cones and spheres), **Statistics and Probability** (investigate patterns of association in bivariate data).

Honors consists of the Grade 8 Common Core Mathematics Standards listed above, however will require students to apply concepts at a higher level, and at a more rapid pace.

I. UNIT 1: Real Numbers, Exponents, and Scientific Notation
- a. Module 1 – Real Numbers
  - i. 1.1 – Rational and Irrational Numbers
  - ii. 1.2 – Sets of Real Numbers
  - iii. 1.3 – Ordering Real Numbers
- b. Module 2 – Exponents and Scientific Notation
  - i. 2.1 – Integer Exponents
  - ii. 2.2 – Scientific Notation with Positive Powers of 10
  - iii. 2.3 – Scientific Notation with Negative Powers of 10
  - iv. 2.4 – Operations with Scientific Notation

II. UNIT 2: Proportional and Nonproportional Relationships and Functions
- a. Module 3 – Proportional Relationships
  - i. 3.1 – Representing Proportional Relationships
  - ii. 3.2 – Rate of Change and Slope
  - iii. 3.3 – Interpreting the Unit Rate as Slope
- b. Module 4 – Nonproportional Relationships
  - i. 4.1 – Representing Linear Nonproportional Relationships
  - ii. 4.2 – Determining Slope and y-intercept
  - iii. 4.3 – Graphing Linear Nonproportional Relationships Using Slope and y-intercepts
  - iv. 4.4 – Proportional and Nonproportional Situations
- c. Module 5 – Writing Linear Equations
  - i. 5.1 – Writing Linear Equations from Situations and Graphs
  - ii. 5.2 – Writing Linear Equations from a Table
  - iii. 5.3 – Linear Relationships and Bivariate Data
- d. Module 6 – Functions
  - i. 6.1 – Identifying and Representing Functions
  - ii. 6.2 – Describing Functions
  - iii. 6.3 – Comparing Functions
  - iv. 6.4 – Analyzing Graphs

III. UNIT 3: Solving Equations and Systems of Equations
- a. Module 7 – Solving Linear Equations
  - i. 7.1 – Equations with the Variable on Both Sides
  - ii. 7.2 – Equations with Rational Numbers
  - iii. 7.3 – Equations with the Distributive Property
  - iv. 7.4 – Equations with Many Solutions or No Solution
- b. Module 8 – Solving Systems of Linear Equations
  - i. 8.1 – Solving Systems of Linear Equations by Graphing
  - ii. 8.2 – Solving Systems by Substitution
  - iii. 8.3 – Solving Systems by Elimination
  - iv. 8.4 – Solving Systems by Eliminations with Multiplication
  - v. 8.5 – Solving Special Systems

IV. UNIT 4: Transformational Geometry
- a. Module 9 – Transformations and Congruence
  - i. 9.1 – Properties of Translations
  - ii. 9.2 – Properties of Reflections
  - iii. 9.3 – Properties of Rotations
  - iv. 9.4 – Algebraic Representations of Transformations
  - v. 9.5 – Congruent Figures
- b. Module 10 – Transformations and Similarity
  - i. 10.1 – Properties of Dilations
  - ii. 10.2 – Algebraic Representations of Dilations
  - iii. 10.3 – Similar Figures

V. UNIT 5: Measurement Geometry
- a. Module 11 – Angle Relationships in Parallel Lines and Triangles
  - i. 11.1 – Parallel Lines Cut by a Transversal
  - ii. 11.2 – Angle Theorems for Triangles
  - iii. 11.3 – Angle-Angle Similarity
- b. Module 12 – The Pythagorean Theorem
  - i. 12.1 – The Pythagorean Theorem
  - ii. 12.2 – Converse of the Pythagorean Theorem
  - iii. 12.3 – Distance Between Two Points
- c. Module 13 – Volume
  - i. 13.1 – Volume of Cylinders
  - ii. 13.2 – Volume of Cones
  - iii. 13.3 – Volume of Spheres

VI. UNIT 6: Statistics
- a. Module 14 – Scatter Plots
  - i. 14.1 – Scatter Plots and Association
  - ii. 14.2 – Trend Lines and Predictions
- b. Module 15 – Two-Way Tables
  - i. 15.1 – Two-Way Frequency Tables
  - ii. 15.2 – Two-Way Relative Frequency Tables