Course Description – Accelerated CC Math 7

Student Edition: CA Go Math Middle School Accelerated Grade 7 (Houghton Mifflin Harcourt)

Course Description: Accelerated Math 7 focuses on **Ratios and Proportionality** (analyze proportional relationships and use them to solve problems); **The Number System/Number and Quantity** (know that there are numbers that are not rational, and approximate them, apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers, and work with radicals and integer exponents); **Expressions and Equations/Algebra** (use properties of operations to generate equivalent expressions, solve problems using numerical and algebraic expressions and equations, understand the connections between proportional relationships, lines, and linear equations, and analyze and solve linear equations and pairs of simultaneous linear equations); **Geometry** (draw, construct and describe geometrical figures and describe the relationships between them, solve problems involving angle measure, area, surface area, and volume, including cylinders, cones, and spheres, and understand congruence and similarity using physical models); **Statistics and Probability** (use random sampling to draw inferences about a population, draw informal comparative inferences about two populations, and investigate chance processes and develop, use, and evaluate probability models).

I. **UNIT 1: The Number System**
   a. Module 1 – Adding and Subtracting Integers
      i. 1.1 – Adding Integers with the Same Sign
      ii. 1.2 – Adding Integers with Different Signs
      iii. 1.3 – Subtracting Integers
      iv. 1.4 – Applying Addition and Subtraction of Integers
   b. Module 2 – Multiplying and Dividing Integers
      i. 2.1 – Multiplying Integers
      ii. 2.2 – Dividing Integers
      iii. 2.3 – Applying Integer Operations
   c. Module 3 – Rational Numbers
      i. 3.1 – Rational Numbers and Decimals
      ii. 3.2 – Adding Rational Numbers
      iii. 3.3 – Subtracting Rational Numbers
      iv. 3.4 – Multiplying Rational Numbers
      v. 3.5 – Dividing Rational Numbers
      vi. 3.6 – Applying Rational Number Operations

II. **UNIT 2: Ratios and Proportional Relationships**
   a. Module 4 – Ratios and Proportionality
      i. 4.1 – Unit Rates
      ii. 4.2 – Constant Rates of Change
      iii. 4.3 – Proportional Relationships and Graphs
   b. Module 5 – Proportions and Percent
      i. 5.1 – Percent Increase and Decrease
      ii. 5.2 – Rewriting Percent Expressions
      iii. 5.3 – Applications of Percent

III. **UNIT 3: Expressions, Equations, and Inequalities**
   a. Module 6 – Expressions and Equations
      i. 6.1 – Algebraic Expressions
      ii. 6.2 – One-Step Equations with Rational Coefficients
      iii. 6.3 – Writing Two-Step Equations
      iv. 6.4 – Solving Two-Step Equations
   b. Module 7 – Inequalities
      i. 7.1 – Writing and Solving One-Step Inequalities
      ii. 7.2 – Writing Two-Step Inequalities
      iii. 7.3 – Solving Two-Step Inequalities

IV. **UNIT 4: Geometry**
   a. Module 8 – Modeling Geometric Figures
      i. 8.1 – Similar Shapes and Scale Drawings
      ii. 8.2 – Geometric Drawings
      iii. 8.3 – Cross Sections
      iv. 8.4 – Angle Relationships
   b. Module 9 – Circumference, Area, and Volume
      i. 9.1 – Circumference
      ii. 9.2 – Area of Circles
      iii. 9.3 – Area of Composite Figures
      iv. 9.4 – Solving Surface Area Problems
      v. 9.5 – Solving Volume Problems

V. **UNIT 5: Statistics**
   a. Module 10 – Analyzing and Comparing Data
      i. 10.1 – Comparing Data Displayed in Dot Plots

ii. 10.2 – Comparing Data Displayed in Box Plots
iii. 10.3 – Using Statistical Measures to Compare Populations

b. Module 11 – Random Samples and Populations
i. 11.1 – Populations and Samples
ii. 11.2 – Making Inferences from a Random Sample
iii. 11.3 – Generating Random Samples

VI. UNIT 6: Probability

a. Module 12 – Experimental Probability
i. 12.1 – Probability
ii. 12.2 – Experimental Probability of Simple Events
iii. 12.3 – Experimental Probability of Compound Events
iv. 12.4 – Making Predictions with Experimental Probability

b. Module 13 – Theoretical Probability and Simulations
i. 13.1 – Theoretical Probability of Simple Events
ii. 13.2 – Theoretical Probability of Compound Events
iii. 13.3 – Making Predictions with Theoretical Probability
iv. 13.4 – Using Technology to Conduct a Simulations

VII. UNIT 7: Real Numbers, Exponents, and Scientific Notation

a. Module 14 – Real Numbers
i. 14.1 – Rational and Irrational Numbers
ii. 14.2 – Sets of Real Numbers
iii. 14.3 – Ordering Real Numbers

b. Module 15 – Exponents and Scientific Notation
i. 15.1 – Integer Exponents
ii. 15.2 – Scientific Notation with Positive Powers of 10
iii. 15.3 – Scientific Notation with Negative Powers of 10
iv. 15.4 – Operations with Scientific Notation

VIII. UNIT 8: Linear Relationships and Equations

a. Module 16 – Proportional Relationships
i. 16.1 – Representing Proportional Relationships
ii. 16.2 – Rate of Change and Slope
iii. 16.3 – Interpreting the Unit Rate as Slope

b. Module 17 – Nonproportional Relationships
i. 17.1 – Representing Linear Nonproportional Relationships
ii. 17.2 – Determining Slope and y-intercept
iii. 17.3 – Graphing Linear Nonproportional Relationships Using Slope and y-intercepts
iv. 17.4 – Proportional and Nonproportional Situations

c. Module 18 – Solving Linear Equations
i. 18.1 – Equations with the Variable on Both Sides
ii. 18.2 – Equations with Rational Numbers
iii. 18.3 – Equations with the Distributive Property
iv. 18.4 – Equations with Many Solutions or No Solution

IX. UNIT 9: Transformational Geometry

a. Module 19 – Transformations and Congruence
i. 19.1 – Properties of Translations
ii. 19.2 – Properties of Reflections
iii. 19.3 – Properties of Rotations
iv. 19.4 – Algebraic Representations of Transformations
v. 19.5 – Congruent Figures

b. Module 20 – Transformations and Similarity
i. 20.1 – Properties of Dilations
ii. 20.2 – Algebraic Representations of Dilations
iii. 20.3 – Similar Figures

X. UNIT 10: Measurement Geometry

a. Module 21 – Angle Relationships in Parallel Lines and Triangles
v. 21.1 – Parallel Lines Cut by a Transversal
vi. 21.2 – Angle Theorems for Triangles
vii. 21.3 – Angle-Angle Similarity

b. Module 22 – Volume
i. 22.1 – Volume of Cylinders
ii. 22.2 – Volume of Cones
iii. 22.3 – Volume of Spheres

Supplemental Units

XI. The Pythagorean Theorem

A.1 – The Pythagorean Theorem
A.2 – Converse of the Pythagorean Thm
A.3 – Distance Between Two Points