Course Description – Accelerated CC Integrated Math I

Student Edition: Integrated Mathematics 1 – Volumes 1 and 2 (Houghton Mifflin Harcourt)

Course Description: Integrated Mathematics 1 is the first course of a three-course sequence including Integrated Mathematics 1, Integrated Mathematics 2, and Integrated Mathematics 3 and follows the Integrated Math Pathway in the Common Core State Standards. IM 1 is designed to use patterns, models, and conjectures to build mathematical understanding. Students taking this course will extend their knowledge in **Number and Quantity**, **Algebra**, **Functions**, **Modeling**, **Geometry**, and **Statistics and Probability**. Students will deepen and extend their understanding of linear relationships and be introduced to exponential functions, modeled through data. Students will use properties and theorems involving congruent figures to expand and broaden understanding of geometric knowledge. Students will experience mathematics as a coherent, useful, and logical subject that draws on their ability to make sense of problem situations, and will develop the ability to explore and solve mathematical problems, think critically, work cooperatively with other students and communicate mathematical ideas clearly.

I.   **UNIT 1: Quantities and Modeling**
    a. Module 1 – Quantitative Reasoning
        i. 1.1 – Solving Equations
        ii. 1.2 – Modeling Quantities
        iii. 1.3 – Reporting with Precision and Accuracy
    b. Module 2 – Algebraic Models
        i. 2.1 – Modeling with Expressions
        ii. 2.2 – Creating and Solving Equations
        iii. 2.3 – Solving for a Variable
        iv. 2.4 – Creating and Solving Inequalities
        v. 2.5 – Creating and Solving Compound Inequalities

II.   **UNIT 2: Understanding Functions**
    a. Module 3 – Functions and Models
        i. 3.1 – Graphing Relationships
        ii. 3.2 – Understanding Relations and Functions
        iii. 3.3 – Modeling with Functions
        iv. 3.4 – Graphing Functions
    b. Module 4 – Patterns and Sequences
        i. 4.1 – Identifying and Graphing Sequences
        ii. 4.2 – Constructing Arithmetic Sequences
        iii. 4.3 – Modeling with Arithmetic Sequences

III.   **UNIT 3: Linear Functions, Equations, and Inequalities**
    a. Module 5 – Linear Functions
        i. 5.1 – Understanding Linear Functions
        ii. 5.2 – Using Intercepts
        iii. 5.3 – Interpreting Rate of Change and Slope
    b. Module 6 – Forms of Linear Equations
        i. 6.1 – Slope-Intercept Form
        ii. 6.2 – Point-Slope Form
        iii. 6.3 – Standard Form
        iv. 6.4 – Transforming Linear Functions
        v. 6.5 – Comparing Properties of Linear Functions
    c. Module 7 – Linear Equations and Inequalities
        i. 7.1 – Modeling Linear Relationships
        ii. 7.2 – Using Functions to Solve One-Variable Equations
        iii. 7.3 – Linear Inequalities in Two Variables

IV.   **Unit 4: Statistical Models**
    a. Module 8 – Multi-Variable Categorical Data
        i. 8.1 – Two-Way Frequency Tables
        ii. 8.2 – Relative Frequency
    b. Module 9 – One-Variable Data Distributions
        i. 9.1 – Measures of Center and Spread
        ii. 9.2 – Data Distributions and Outliers
        iii. 9.3 – Histograms and Box Plots
        iv. 9.4 – Normal Distributions
    c. Module 10 – Linear Modeling and Regression
        i. 10.1 – Scatter Plots and Trend Lines
        ii. 10.2 – Fitting a Linear Model to Data

V.   **UNIT 5: Linear Systems and Piecewise-Defined Functions**
    a. Module 11 – Solving Systems of Linear Equations
        i. 11.1 – Solving Linear Systems by Graphing
        ii. 11.2 – Solving Linear Systems by Substitution
        iii. 11.3 – Solving Linear Systems by Adding or Subtracting
        iv. 11.4 – Solving Linear Systems by Multiplying First
    b. Module 12 – Modeling with Linear Systems
        i. 12.1 – Creating Systems of Linear Equations