Course Description:

In this course, students will build on previously learned concepts like adding, subtracting, multiplying, and dividing. They will deepen their knowledge of arithmetic with fractions and work with decimals and negative numbers. They will apply these new skills to help solve real-world problems using ratios, unit conversions, and geometry.

Course Objectives:

- Perform operations on integers and rational numbers.
- Identify and use factors to describe relationships between two numbers and rewrite expressions.
- Interpret integers and rational numbers in real-world situations.
- Solve mathematical and real-world problems using number lines.
- Describe and interpret relationships between numbers in mathematical and real-world situations using inequality statements.
- Solve mathematical and real-world problems using the coordinate plane.
- Identify, describe, represent, and compare ratio relationships.
- Use ratio relationships to solve problems related to percents, unit rates, and unit conversions.
- Find areas of different polygons using different methods to solve problems.

Required Materials:

In Course

Course Overview:

Unit 1: Integers, Factors, and Multiples

- Learn (Lessons 1-5)
  - Key Terms
  - Text: Integers; Factors; Long Division; Common Factors; Common Multiples
  - Workbooks
- Checkpoint (Lessons 1-4)
- Unit 1 Exam (Lesson 5)

Unit 2: Working with Rational Numbers

- Learn (Lessons 6-9)
  - Key Terms
  - Text: Rational Numbers; Comparing Rational Numbers of Different Forms; Multiplying and Dividing Fractions; Operations with Decimals
  - Workbooks
- Checkpoint (Lessons 6-8)

- Unit 2 Exam (Lesson 9)

Unit 3: Ratios

- Discussion (Lesson 11)
- Learn (Lessons 10-15)
  - Key Terms
  - Text: What Are Ratios?; Ratio Models; Percents; Equivalent Ratios; Graphs of Ratios; Comparing Ratios
  - Workbooks
- Checkpoint (Lessons 10-14)
- Unit 3 Exam (Lesson 15)

Unit 4: Unit Rates and Absolute Value

- Learn (Lessons 16-20)
  - Key Terms
  - Text: Unit Rates; Unit Rate Applications; Unit Conversions; Absolute Value; Using Absolute Value
  - Workbooks
- Checkpoint (Lessons 16-19)
- Unit 4 Exam (Lesson 20)
- Project (Lessons 18 and 19)

Unit 5: The Coordinate Plane

- Learn (Lessons 21-24)
  - Key Terms
  - Text: The Basics of the Coordinate Plane; Distance on the Coordinate Plane; Polygons on the Coordinate Plane; Solving Problems Using the Coordinate Plane
  - Workbooks
- Checkpoint (Lessons 21-23)
- Unit 5 Exam (Lesson 24)

Unit 6: Area

- Learn (Lessons 25-28)
  - Key Terms
  - Text: Areas of Common Polygons; Graphs of Polygons; Areas of Special Quadrilaterals; Areas of Other Polygons; Unit Reviews; Final Exam
  - Workbooks
- Checkpoint (Lessons 25-27)
- Unit 6 Exam (Lesson 28)
- Unit Reviews (Lesson 29)
- Final Exam (Lesson 30)