Grade 7 Mathematics delivers instruction, practice, and review designed to develop computational fluency, deepen conceptual understanding, and apply mathematical practices. Throughout the course, students gain a deep understanding of proportions and their use in solving problems. They extend their fluency with operations on rational numbers and translate among different forms of rational numbers. Algebra topics include simplifying and rewriting algebraic expressions and solving more complex equations and inequalities. Students also sketch geometric figures and explore scale drawings, investigate circle properties and angle relationships, and deepen their understanding of area, volume, and surface area. They see how statistics uses sample data to make predictions about populations and compare data from different data sets. Students gain a fundamental understanding of probability and explore different ways to find or estimate probabilities.

The two-semester course is arranged in themed units, each with three to five lessons. Each lesson includes a variety of activities such as direct instruction, application of skills, performance tasks, and formative and summative assessments. Students engage with the subject matter in an interactive, feedback-rich environment as they progress through standards-aligned content and demonstrate their learning through computer- and teacher-scored assignments. By constantly honing the ability to apply their knowledge in abstract and real-world scenarios, students build the depth of knowledge and higher-order skills required to demonstrate their mastery when put to the test.

This course is built to state standards.

Length: Two Semesters

Unit 1: Number Sense

- Fractions, Decimals, and Percents
- Applications of Percents
- Using Operations on Rational Numbers to Solve Problems
- Wrap-Up: Number Sense

Unit 2: Addition and Subtraction of Rational Numbers

- Using Properties to Add and Subtract Rational Numbers
- Adding Rational Numbers
- Subtracting Rational Numbers
- Wrap-Up: Addition and Subtraction of Rational Numbers

Unit 3: Multiplication and Division of Rational Numbers

- Multiplying Rational Numbers
- Dividing Rational Numbers
- Using Properties to Multiply and Divide Rational Numbers

- Solving Multistep Problems with Rational Numbers
- Wrap-Up: Multiplication and Division of Rational Numbers

Unit 4: Rates, Ratios, and Proportions

- Unit Rates and Proportionality
- Proportional Quantities
- Identifying the Constant of Proportionality
- Wrap-Up: Rates, Ratios, and Proportions

Unit 5: Proportional Relationships

- Using Proportions to Solve Problems
- Markups, Discounts, and Percent Change
- Identifying Proportional Relationships
- Wrap-Up: Proportional Relationships

Unit 6: Semester Wrap-Up

Unit 7: Expressions, Equations, and Inequalities

- Simplifying Exponential Expressions
- Algebraic Expressions
- Solving One-Step Inequalities
- Solving Two-Step Equations
- Using Equations to Solve Problems
- Wrap-Up: Expressions, Equations, and Inequalities

Unit 8: Geometry in Two and Three Dimensions

- Circles
- Area
- Scale Drawings
- Surface Area
- Volume
- Wrap-Up: Geometry in Two and Three Dimensions

Unit 9: Statistics and Sampling

- Displaying Data
- Populations and Samples
- Comparing Data Sets
- Choosing Appropriate Measures to Summarize Data Sets
- Wrap-Up: Statistics and Sampling

Unit 10: Probability

- Probability
- Theoretical and Experimental Probability
- Simulations
- Wrap-Up: Probability

Unit 11: Semester 2 Exam