## COURSE OVERVIEW

**Grade 6** begins by building on students' understanding of multiplication and division and equivalent fractions as a basis for understanding ratios and proportional reasoning. Work with positive rational numbers continues as students build fluency with standard algorithms for fraction and multi-digit decimal operations. Formal work with expressions and equations also begins at this level as students use variables to represent relationships and solve problems. Students then extend their understanding of numbers to include negative rational numbers, absolute value as a distance, and coordinates of points in all quadrants of the coordinate plane. Students extend their understanding of length, area, and volume as they solve problems involving the areas of triangles, special quadrilaterals, and polygons, and volume of rectangular prisms. Finally, formal work with statistics begins at this grade level in the final unit as students represent data in various ways and build their understanding of statistical variation.

## CRITICAL AREAS

In Grade 6, instructional time should focus on four critical areas:

1. connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems;
2. completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers;
3. writing, interpreting, and using expressions and equations; and
4. developing understanding of statistical thinking.

## CORE 6 STANDARDS

### Ratios and Proportional Relationships

- Understand ratio concepts and use ratio reasoning to solve problems.

### The Number System

- Apply and extend previous understandings of multiplication and division to divide fractions
- by fractions.
- Compute fluently with multi-digit numbers and find common factors and multiples.
- Apply and extend previous understandings of numbers to the system of rational numbers.

### Expressions and Equations

- Apply and extend previous understandings of arithmetic to algebraic expressions.
- Reason about and solve one-variable equations and inequalities.
- Represent and analyze quantitative relationships between dependent and independent variables.

### Geometry

- Solve real-world and mathematical problems involving area, surface area, and volume.

### Statistics and Probability

- Develop understanding of statistical variability.
- Summarize and describe distributions.

## Standards for Mathematical Practice (SMP)

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

## EXPECTED OUTCOMES

Students are expected to perform at a proficient level on a variety of tasks and assessments addressing the Standards for Mathematical Practice and the Maryland College and Career Readiness Standards addressed in Core Math 6.

## RECOMMENDED GRADING ELEMENTS

| Grading Element | Classroom Grading Policies |
|---|---|
| **Product** | Graded work assessing a student's mastery of mathematics such as:<br>Tests, quizzes, project work that assesses a student's understanding |
| **Process** | Graded work that provides for practice and allows teachers to elicit evidence of student thinking:<br>In class assignments, notes, warm-ups, participation, homework |