## The Number System

In seventh grade, students develop greater understanding of the number system by exploring **rational numbers**: integers, fractions, decimals, and percents.

At this level, students apply and extend previously learned concepts of addition, subtraction, multiplication, and division to adding, subtracting, multiplying, and dividing with any of the rational numbers. For instance, students may find the sum -10 + 5 by locating -10 on a number line, moving 5 spaces in the positive direction, and interpreting the number they land on (-5) as the sum. Similarly, students apply long-division concepts to learn the difference between terminating and repeating decimals—a concept necessary for later work with rational and irrational numbers.

Students continue building on their previous work with the order of operations to solve problems with rational numbers. The **order of operations** is a set of rules for determining the order in which the operations in an expression are performed. Students will apply their expanded view of the rational numbers when they work with algebraic expressions. They will learn that rewriting an expression in different forms can help them solve problems. They will also learn to work more confidently with negative numbers by viewing and experiencing them in everyday contexts.

## The Grade 7 Common Core State Standards for The Number System specify that students should–

• Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

The following hands-on activities enable teachers to provide rich opportunities for students to deepen their understanding of the number system, with particular regard to the rational numbers. The experiences will help students to develop a unified understanding of number–that is, to work flexibly with integers, fractions, decimals, and percents.