The Number System

Number system learning at this level builds on students' previous learning of the base ten number system. Students continue developing their overall understanding of numbers, learning ways to represent them and discovering relationships among them. In particular, students extend the notion of number to include negative numbers. That is, they learn to work with the full set of **rational numbers**, which are the whole numbers, fractions, and decimals they have been learning to work with, plus their negatives.

> ### The Grade 6 Common Core State Standards for The Number System specify that students should–
>
> - 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.

Students often experience frustration when faced with problems that involve multiplication and division with fractions. This might be due to previous learning experiences that involved memorization of algorithms instead of engagement in activities that promote conceptual understanding.

The following hands-on activities enable teachers to help students learn the concepts of rational numbers in a rich and meaningful way. Teachers will want to encourage students to communicate about and explain why certain methods, for instance those for dividing fractions, make sense. When students do this, they will be on track to develop a deep and true understanding of the concepts.