Curriculum Parent Overview (Grade 4)

MATHEMATICS

UNIT #6: FRACTION CARDS AND DECIMAL GRIDS (FRACTIONS AND DECIMALS)

CONTENT FOCUS:
Students find fractional parts of the areas of rectangles and identify equivalent fractions. Students are introduced to decimal notation and represent and identify tenths and hundredths. Students compare and order fractions on a number line. They make conjectures about general rules for comparing fractions. Students compare and order decimals that include tenths and hundredths. Students add and subtract fractions and mixed numbers, including problems that involve measurement. They discuss strategies for adding and subtracting fractions and mixed numbers with like denominators. They also add tenths and hundredths. Students use representations to multiply fractions by whole numbers. They solve a variety of addition, subtraction, and multiplication problems that include fractions and mixed numbers.

UNIT FOCUS:
- <u>Understanding the meaning of fractions and decimals</u>: Students use Fraction Cards to visualize how fractions are related as equal parts of a whole and how they are related to one another. These representations are important references for students' understanding of fractions, and they help students develop mental images of these numbers. Students are introduced to tenths and hundredths as an extension of the place-value system they have studied for whole numbers and learn that tenths and hundredths can be represented both with fraction and decimal notation. Students need experience and focus to help develop a sound understanding of what these numbers mean, how they are related to whole numbers, and how they are related to fractions.
- <u>Comparing the values of fractions and decimals</u>: Students use their mental images of fractions and their knowledge of fraction equivalencies and relationships to reason about fraction comparisons and ordering fractions on a number line. In their work with decimals, students focus on multiples of 0.1 and multiples of 0.01 as they develop their understanding of the meaning of these numbers. By representing decimals on rectangles divided into tenths and hundredths, they develop visual images of the relationships between these numbers; for example, that 0.9 is more than 0.4 and that 0.25 is more than 0.20.
- <u>Computing with rational numbers</u>: Students begin performing computations with rational numbers by drawing or visualizing representations of these numbers. Students add and subtract fractions and mixed numbers, focusing on solving problems in the context of measurement. They use pictures of the areas of rectangles as well as number lines as they begin to make sense of adding and subtracting fractions. They discuss what happens to the numerator and denominator of the fractions as the fractions or mixed numbers are added or subtracted, and they think about how the strategies they use for adding and subtracting mixed numbers and fractions related to the strategies they use for adding and subtracting whole numbers.

MATHEMATICAL PRACTICES:
MP3: Construct viable arguments and critique the reasoning of others.
MP6: Attend to precision.

CONNECTIONS TO PREVIOUS CONTENT:
This unit builds on the work in Grade 3, as students worked with fractions with denominators of 2, 3, 4, 6 and 8. Students used a variety of math tools, including drawings, pattern blocks, and number lines to do this work. It is expected that most Grade 4 students understand the meaning of fractions and (using fractions with denominators 2, 3, 4, 6, and 8) can compare fractions, place fractions on a number line, and identify equivalent fractions.

CONNECTIONS TO FUTURE CONTENT:

In Grade 5, students continue their work with fractions and decimals. Grade 5 students continue using representations to extend their understanding of fractions and computation involving fractions. They use the idea of equivalent fractions as a strategy to add and subtract fractions, and apply and extend their understanding of multiplication and division of whole numbers to multiplication and division of fractions (within given restraints). They use similar understandings of the operations and the base-10 number system to add, subtract, multiply, and divide decimals to hundredths.

MATH AT HOME:

- Fraction and decimal scavenger hunt: Be on the lookout for examples of fractions and decimals in your world - in the kitchen, a toolbox, a sewing kit, or on food, in magazines and newspapers. Take these opportunities to talk to your child about what the fraction or decimal means.
- Cooking is another great way to learn about fractions. Ask your child questions such as, "How do we measure ¾ cup?" Look together at how the fractions appear on a measuring cup. Doubling recipes or cutting them in half can help your child understand relationships between fractions.
- Review the Math Words and Ideas videos for this unit on SavvasRealize site.