Dear Family,

The next Unit in your child's mathematics class this year is **Comparing Bits and Pieces: Ratio, Rational Numbers, and Equivalence.** In this Unit, students extend their understanding of rational numbers. They also explore ratio as a comparison of two quantities and use rate tables to study equivalent ratios.

Unit Goals

In this Unit, students will deepen their knowledge of and comfort with fractions and build understandings of ratio for use in later Units and grades. They learn to recognize fractions and decimals as numbers that can be located on the number line as well as compared, counted, partitioned and decomposed. Students recognize ratios as comparisons of two numbers. They also recognize equivalence of fractions and ratios, and use equivalence to solve problems.

Helping With Homework and Conversations About the Mathematics

In your child's notebook, you can find worked-out examples, notes on the mathematics of the Unit, and descriptions of the vocabulary words.

You can help with homework by asking questions such as the following:

- What models or diagrams might be helpful in understanding the situation?
- In this problem, which comparison makes more sense, a difference or a ratio?
- What strategies can you use to find equivalent forms of fractions, decimals, ratios or percents?
- What strategies can you use to reason about numbers greater than or less than 0?
- How can you use unit rates or rate tables to make comparisons?

You can help your child with his or her work for this Unit in several ways:

- Talk to your child about the ways you use rates, ratios, fractions, decimals, and percents.
- With your child, find examples of how newspapers, magazines, radio, and television use fractions, decimals, and percents.
- Review your child's homework; make sure he or she has answered all the questions and provided clear explanations.

Common Core State Standards

Students develop and use all of the Standards for Mathematical Practice throughout the curriculum. In *Comparing Bits and Pieces*, students spend significant time using appropriate tools strategically. For example, they use fraction strips to mark number lines. This Unit focuses on number systems, ratios, and proportional relationships.

A few important mathematical ideas that your child will learn in this Unit are given on the next page. As always, if you have any questions or concerns about this Unit or your child's progress in the class, please feel free to call.

Sincerely,

Important Concepts	Examples
Fractions as Parts of a Whole In the part–whole interpretation of fractions, students should determine what the whole is, divide the whole into equal-size parts (that are not necessarily the same shape), recognize the number of parts they need to represent the situation, and form a fraction by placing the parts needed over the number of parts into which they have divided the whole.	If there are 24 students in the class and 16 are girls, then you can represent the part of the whole that is girls as $\frac{16}{24}$. You can also represent $\frac{16}{24}$ as $\frac{2}{3}$. The denominator 3 tells into how many equal-size parts the whole has been divided, and the numerator 2 tells how many of the equal-size parts have been shaded.
Fractions as Measures or Quantities In this interpretation, students think of fractions as numbers.	A fraction can be a measurement that is "in between" two whole measures. Students see this every day in references such as $2\frac{1}{2}$ brownies or $7\frac{3}{4}$ inches.
Fractions as Decimals Students need to understand decimals in two ways: as special fractions with denominators of 10 and powers of 10, and as a natural extension of the place-value system for representing quantities less than 1.	For example, to find the decimal representation of the fraction $\frac{2}{5}$, rewrite it with a power of 10 in the denominator. $\frac{2}{5} = \frac{4}{10}$ The fraction has tenths in the denominator, so the decimal equivalent places the 4 in the tenths place. $\frac{4}{10} = 0.4$
Ratio Students build understanding of ratios as comparisons of numbers. Students express ratios in different ways: with the language of *for every*, using the word *to*, with colon notation (*a* : *b*), and using the word *per*.	When you say that $\frac{1}{6}$ of a school is sixth graders, strictly speaking, this is not a number but a ratio. It compares a part to the whole: *for every* 6 students, 1 is a sixth grader. The ratio of the sixth-grade fundraising goal *to* the seventh-grade fundraising goal is 60 : 90. Mary runs at 5 miles *per* hour.
Unit Rate A unit rate is a comparison in which one of the numbers being compared is 1 unit. You can use unit rates to calculate equivalent ratios.	Finn runs 10 miles in 2 hours. Finn runs 2.5 miles in a half hour (or 30 minutes). Finn runs 1 mile in $\frac{1}{5}$ hour (or 12 minutes). The statement *Finn runs 1 mile in 12 minutes* expresses a unit rate.
Rate Table Rate tables are a way to express equivalent ratios. For example, if you know that 1 ounce of popcorn kernels yields 4 cups of popped corn, you can use a rate table to calculate other amounts.	**Cups of Popcorn From Ounces of Kernels**

Number of Cups of Popcorn	4	8	12	16	20	24	28	32	36	40	44	48
Number of Ounces of Popcorn Kernels	1	2	3	4	5	6	7	8	9	10	11	12