

## Fourth Grade Mathematics Second Nine Weeks

**Dear Parents:**

**These objectives listed below will be covered in the 2nd Nine Weeks Unit of study.**

### **Multiplication & Division**

- Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that  $67 \times 10 = 670$  &  $670 \div 67 = 10$  by applying concepts of place value and division.*
- Multiply a whole number of up to four digits by a one-digit whole, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.
- Multiply or divide to solve word problems.
- Apply the area and perimeter formulas for rectangles in real world mathematical problems.

### **Fractions:**

#### ***Addition and Subtraction of Fractions***

- Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples:  $3/8 = 1/8 + 1/8 + 1/8$ ;  $3/8 = 1/8 + 2/8$ ;  $2 \frac{1}{8} = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$ .
- Add and subtract mixed numbers with like denominators.
- Solve word problems involving addition and subtraction of fractions by using visual fraction models and equations to represent the problem.

#### ***Extend understanding of fraction equivalence***

- Explain why a fraction  $a/b$  is equivalent to a fraction  $(n \times a)/(n \times b)$  by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size.

#### ***Understand decimal notation for fractions***

- Express a fraction with denominator 10 as an equivalent fraction with denominator 100. *For example, express  $3/10$  as  $30/100$ , and add  $3/10 + 4/100 = 34/100$ .*
- Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite  $0.62$  as  $62/100$ ; describe a length as  $0.62$  meters; locate  $0.62$  on a number line diagram.*

### **Measurement and Data**

- Know relative sizes of measurement units within one system of units including km, m, cm, kg, g, lb, oz., l, ml; hr, min, sec. For example, know that 1ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in.
- Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects decimals.
- Make a line plot to display a data set of measurements in fractions of a unit ( $1/2$ ,  $1/4$ ,  $1/8$ ).

***Here are some suggestions as to what you can do at home to help your child:***

- Present multistep word problems with whole numbers and whole-number answers using the four operations. Ask your child which operations are needed to solve the problem. Drawing pictures or using models will help them understand what the problem is asking. They should check the reasonableness of their answer using mental computation and estimation strategies. An example could be, "Five classes are going on a bus trip and each class has 21 students. If each bus holds only 40 students, how many buses are needed for the trip?"
- Have your child compare numbers with the same number of digits, e.g., compare 453, 698 and 215; numbers that have the same number in the leading digit position, e.g., compare 45, 495 and 41,223; and numbers that have different numbers of digits and different leading digits, e.g., compare 312, 95, 5245 and 10,002.
- Have your child create numbers that meet specific criteria. For example, provide them with cards numbered 0 through 9. Ask students to select 4 to 6 cards; then, using all the cards make the largest number possible with the cards, the smallest number possible and the closest number to 5000 that is greater than 5000 or less than 5000.
- Provide students with a spinner using a pencil and paper clip to spin. Label the spinner with common fractions (e.g.  $\frac{1}{4}$ ,  $\frac{2}{4}$ ,  $\frac{3}{4}$ ,  $\frac{4}{4}$  or  $\frac{1}{6}$ ,  $\frac{2}{6}$ ,  $\frac{3}{6}$ ,  $\frac{4}{6}$ ,  $\frac{5}{6}$ ,  $\frac{6}{6}$ ). Each spinner should contain the same denominator, e.g. all fourths or all sixths. Have students spin the spinner 3 times and add together the 3 fractions they land on. Students may convert an improper fraction ( $\frac{5}{4}$ ) to a mixed number ( $1\frac{1}{4}$ ).
- Students need to make connections between fractions and decimals. They should be able to write decimals for fractions with denominators of 10 or 100. Have students say the fraction with denominators of 10 and 100 aloud. For example  $\frac{4}{10}$  would "four tenths" or  $\frac{27}{100}$  would be "twenty-seven hundredths." Also, have students represent decimals in word form with digits and the decimal place value, such as  $\frac{4}{10}$  would be 4 tenths. Students should be able to express decimals to the hundredths as the sum of two decimal fractions. For example, students can write 0.32 as the sum of two fractions  $\frac{3}{10} + \frac{2}{100}$ . Students need to make connections between fractions and decimals. They should be able to write decimals for fractions with denominators of 10 or 100.
- Have your child measuring items in the house using different units, rulers and yardsticks. They need to discover relationships such as that there are 12 inches in 1 foot and 3 feet in 1 yard. Present word problems as a source of students' understanding of the relationships among inches, feet and yards, such as how many inches are in 4 ft.