

## **Fourth Grade Mathematics Fourth Nine Weeks**

### **Dear Parents:**

**The objectives listed below will be covered in the 4th Nine Weeks Unit of study in math.**

### **Multiplication of Fractions by a Whole Number**

- Apply and extend previous understandings of multiplication to multiply a fraction by a whole number by using visual models
- Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat  $\frac{3}{8}$  of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?

### **Multiplication & Division and Algebraic Thinking**

- 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  $700 \div 70 = 10$  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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- Multiply or divide to solve word problems involving multiplicative comparison, by using drawings and equations with a symbol for the unknown number to represent the problem.
- Solve multistep word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- Find all factor pairs for a whole number in the range 1-100. Determine whether a given whole number in the range 1-100 is prime or composite.
- Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

### **Measurement**

- Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit
- Know relative sizes of measurement units within one system of units including km, m, cm, kg, g, lb, oz., l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table. For example, know that 1ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36).

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

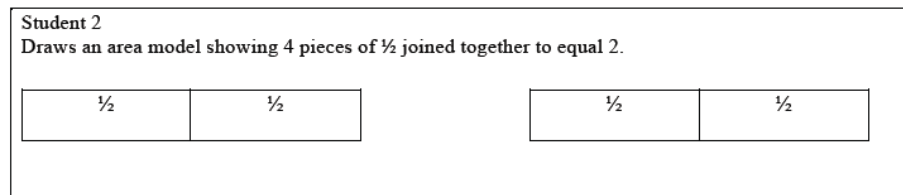
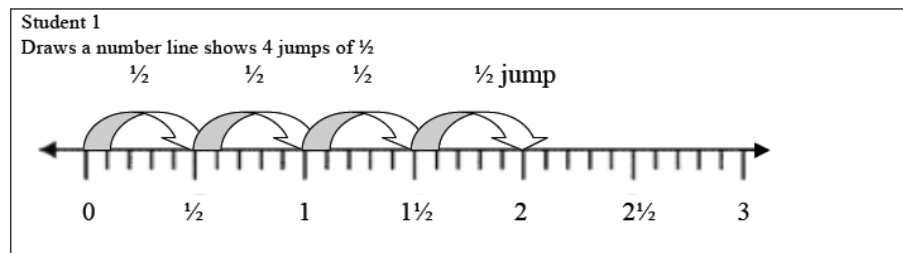
- To practice problem solving skills,
  - Use a map with a distance key to plan a simple route to an interesting location or vacation site. Estimate the distance to the destination using the map. Estimate how long it will take to travel each way at an average speed of 50 miles per hour. Plan a travel budget including the cost of a motel, meals, admissions and souvenirs.
  - Use a recipe to practice measurement skills. Then double or triple the recipe for a larger group.
- In fourth grade, students build on their third grade work with division within 100. Students need opportunities to develop their understandings by using problems in and out of context. Example: A 4th grade teacher bought 4 new pencil boxes. She has 260 pencils. She wants to put the pencils in the boxes so that each box has the same number of pencils. How many pencils will there be in each box?
  - Using Place Value:  $260 \div 4 = (200 \div 4) + (60 \div 4)$
  - Using Multiplication to multiply up:  $4 \times 50 = 200$ ,  $4 \times 10 = 40$ ,  $4 \times 5 = 20$ ;  $50 + 10 + 5 = 65$ ; so  $260 \div 4 = 65$
- To practice multiplication, give your child equations (2 digit x a 2 digit) such as  $23 \times 36$ . Have them illustrate using an area model such as the example below.

Then add the four partial products together to get 828.

	20 + 3	
30	600	90
+		
6	120	18

$$\begin{array}{r}
 30 \times 20 = 600 \\
 30 \times 3 = 90 \\
 6 \times 20 = 120 \\
 6 \times 3 = \underline{18} \\
 \hline
 828
 \end{array}$$

- One of the fraction standards for this quarter calls for students to use visual fraction models to solve word problems related to multiplying a whole number by a fraction. Give your child different word problem and have them represent the solution. Example: In a relay race, each runner runs  $\frac{1}{2}$  of a lap. If there are 4 team members how long is the race?



- Ask your child to compare numbers using phrases like “times as much.” For example, if the family cat weighs 8 lbs. and the family dog weighs 56 lbs., how many times as much does the dog weigh?
- Ask your child to help you compare fractional amounts — for example, if one recipe calls for  $\frac{2}{3}$  of a cup of oil, but another recipe calls for  $\frac{3}{4}$  of a cup of oil, which recipe calls for more oil? (In 5th grade, your child will learn ways to determine just how much more oil.)
- Give your child a number such as 36 and ask them to give you all of the factor pairs that can be multiplied to reach that number as a product.

Example       $1 \times 36 = 36$   
                   $2 \times 18 = 36$   
                   $3 \times 12 = 36$   
                   $4 \times 9 = 36$   
                   $6 \times 6 = 36$