FOURTH GRADE MATHEMATICS – Unit 7

Dear Parents,

During Unit 7, your child will apply their understanding of composing and decomposing fractions to develop a conceptual understanding of multiplying a fraction by a whole number. Students also use and extend their previous understandings of multiplication with whole numbers and relate that understanding to fractions.

MULTIPLYING FRACTIONS BY WHOLE NUMBERS

Students need to:

- Interpret a multiplication equation as a comparison, e.g. interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. *(This standard is addressed in this unit to include multiplication of fractions and apply the understanding of "times as much" to multiplying a fraction by a whole number.)*
- Understand a fraction *a/b* as a multiple of 1/*b*. For example, use a visual fraction model to represent 5/4 as the product 5 x (1/4), recording the conclusion by the equation 5/4 = 5 x (1/4). *(Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)*
- *Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. (For example, use a visual fraction model to express 3 x (2/5) as 6 x (1/5), recognizing this product as 6/5. In general, n x (a/b) = (n x a/b))*
- 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 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?)*

BACKGROUND INFORMATION AND EXAMPLES FOR PARENTS

Multiplication as a comparison:
http://learnzillion.com/lessons/2543-see-multiplication-as-a-comparison-using-number-sentences

Multiplying fractions:

http://learnzillion.com/lessons/2938-use-a-number-line-for-multiplication-of-fractions-and-whole-numbers

http://learnzillion.com/lessons/2939-use-a-fraction-model-for-multiplication-of-fractions-and-whole-numbers

http://learnzillion.com/lessons/2832-solve-problems-involving-a-fraction-and-a-whole-number-using-a-number-line

http://learnzillion.com/lessons/126-multiply-fractions-by-whole-numbers-using-models

KEY VOCABULARY

Associative property
Benchmark fraction
Denominator
Equation
Estimate/Estimation
Expression
Factor
Mixed number
Multiple
Multiplicative comparison
Numerator
Product
Unit fraction

WAYS PARENTS CAN HELP

Help your child to make real world connections to the multiplication of whole numbers and fractions when you can. For example, when following a recipe that calls for ¾ a cup of something, have your child help you measure by using a ¼ measuring cup. Have them figure out that they will need to use the ¼ measuring cup 3 times in order to have ¾. In other words, 3 "groups of" ¼ cup equals ¾ cup, 3 x ¼ = ¾.