



September 11, 2015

## Fourth Grade Math Monthly Message

### Unit 1 - Place Value, Number Sense, Addition, Subtraction

During the first few weeks of school we have spent a good amount of time concentrating on **place value, number sense, basic addition and subtraction**. While these concepts may seem like a review of previous learning, these ideas are solid foundation blocks on which to build mathematical thinking. A deeper understanding of these ideas will help to solidify your child's mathematical foundation.

Main concepts in **Unit 1 include**: writing and reading numbers to the millions; renaming numbers in multiple ways; naming each place value through the millions; determining the value of a digit in each place value; comparing & ordering numbers through millions; rounding numbers to the nearest ten, hundred, thousand, and ten thousand. Also included is the connection of place value/number sense with **addition and subtraction**. Students practice adding and subtraction numbers with "**regrouping**" and "**ungrouping**" through the millions, estimation using rounding, and problem-solving.

**Mastery of these concepts requires mastery of the basic facts.** As you continue to review basic facts at home, please remember to work with fact families, versus just the individual facts (i.e.  $2+3=5$  and  $3+2=5$  and  $5-3=2$  and  $5-2=3$  are four facts in a fact family). This will encourage your child's "**nimbleness with numbers**". Helping your child to build "**fact fluency**", will help him/her to be able to attend to critical thinking and reasoning skills when encountering more challenging mathematical problems. **Please refer to our grade level website for practice ideas** ("4<sup>th</sup> grade math" tab – "Suggestions for math facts practice" tab). **Sumdog** is another great way to practice skills, while having fun, too!

**A note about Quizzes versus Unit Tests:** Quizzes are designed to be used as formative evaluations – **it is not necessary to study for quizzes**--these are indicators for the teachers to learn where the students are at, and to check for understanding. Unit tests are designed as summative evaluations - **a study sheet for a unit test will come home prior to the unit test. Helping your child to review and study the problems** on this study sheet will help to prepare for the unit test. The unit test is the "grade" used to determine your child's progress toward particular math standards.



### Next three weeks at a glance...

9/10 Unit 1, Quick Quiz #1

~9/15 Unit 1, Quick Quiz #2

~9/22 Unit 1, Quick Quiz #3

~9/25 Unit 1 Test

10/13, 10/15, 10/16, 10/19, 10/20, 10/26 - **no math**

### Quick thoughts About Math Expressions - Homework

Our math program, **Math Expressions**, attempts to get kids thinking deeper about the concepts of mathematics, rather than just the rote memorization of a technique, or algorithm. I find new aspects of the program every day that I really appreciate for good instruction. One such component of the program is the **homework/remembering pages. These are assigned daily, Monday through Thursday.** I give children at least 15-20 minutes each day to get started on these pages in class. The **Homework side is practice of the daily instruction.** The **Remembering side is a review of previous learning.** I appreciate that students are asked to consistently practice already learned skills--the honing of these skills is what we call mastery. My hope is that your child will share this homework page with you each evening (if he/she says there is no math homework, and it's not a Friday....it's probably not true). **If he/she finished the work, please take a few minutes to look it over with your child.** Notice the strategies he/she is working on, and any concepts that may need a little extra help or attention at home. If the page is not complete, please help your child to finish the assignment. This should never take more than 20 minutes at home. If it does, please let me know. We will make necessary modifications.

# Some Strategies Discussed in Class

## Rounding

When rounding a number, follow these steps:

1. Identify the place value you are asked to round to. Underline that digit.
2. Draw an arrow to the digit to the right of the underlined digit.
3. This arrow points to the digit you use to figure out how to round.
4. If the arrow points to a 0, 1, 2, 3, or 4...."let it rest". In other words, when you write the rounded number, the underlined digit stays the same.
5. If the arrow points to a 5, 6, 7, 8, or 9...."let it soar". In other words, when you write the rounded number, the underlined digit goes up by one.
6. When you write the "rounded number", all digits to the left of the underlined digit stay the same, do whatever you've decided in #4 or #5 above with the underlined digit, and all the digits to the right of the underlined digit go to zero.

### Example:

Round to the nearest thousand: 524,976.....you underlined the 4, you drew an arrow to the 9. A 9 lets it soar, so the underlined digit goes up by one, i.e. it goes from 4 to 5. The rounded number is: 525,000.

## Addition & Subtraction Strategies

### Focus on "Base 10" Principle of Mathematics

Key Ideas: Each place value increases by 10 as you move to the left, and decreases by 10 as you move to the right.

Key Ideas: **Base 10 system** helps to understand how to **rename values**. 100 = 10 tens; 1000 = 100 tens, or 10 hundreds; 10,000 = 1000 tens, 100 hundreds, 10 thousands

Key Ideas: In **addition problems**, what many of us learned as "Carrying" is termed "**Regrouping**". This terminology is adjusted to help students begin to conceptualize the process in terms of number sense, instead of memorization of an algorithm or technique to find an answer. A really good visual example of what this regrouping concept looks like can be found at this link: <http://www.coolmath4kids.com/addition/06-addition-lesson-three-digit-numbers-01.html>

Key Ideas: In **subtraction problems**, what many of us learned as "**Borrowing**" is termed "**Ungrouping**" or "**Renaming**". Here's that awesome website again, with a great colored visual to walk you through the method: <http://www.coolmath4kids.com/subtraction/07-subtraction-lesson-three-digit-numbers-01.html>