Dear Parents,

We want to make sure that you have an understanding of the mathematics your child is learning. Below you will find the standards we will be learning for the next unit, quarter 2: common assessment 3. Your child is not learning math the way we did when we were in school, so hopefully this will assist you when you help your child at home. Please let your child's teacher know if you have any questions. There are several videos and activities on the 4th grade math website. http://4thgradewolves.weebly.com/

We ask that you please do NOT show students how you learned to divide using the "long division" strategy, also known as the standard algorithm. ☺

Standard: MGSE4.OA.3 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. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

The focus in this standard is to have students use and discuss various strategies. It refers to estimation strategies, including using compatible numbers (numbers that sum to 10 or 100) or rounding.

Interpreting remainders. Remainders should be put into context for interpretation. Ways to address remainders:

- Remain as a left over (ignore it)

  Mary had 44 pencils. Six pencils fit into each of her pencil pouches. How many pouches did she fill?

  44 ÷ 6 = p; p = 7 r 2. Mary can fill 7 pouches completely.

- Increase the whole number answer up one

  Mary had 44 pencils. Six pencils fit into each of her pencil pouches. What would the fewest number of pouches she would need in order to hold all of her pencils?

  44 ÷ 6 = p; p = 7 r 2; Mary needs 8 pouches to hold all of the pencils.

MGSE.4.NBT.6 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.

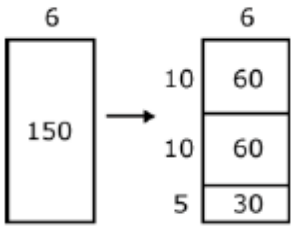
Example:
There are 592 students participating in Field Day. They are put into teams of 8 for the competition. How many teams get created?

Student 1	**Student 2**	**Student 3**
592 divided by 8 There are 70 eights in 560. 592 – 560 = 32 There are 4 eights in 32. 70 + 4 = 74	592 divided by 8 I know that 10 eights is 80. If I take out 50 eights that is 400. 592 – 400 = 192 I can take out 20 more eights which is 160. 192 – 160 = 32 8 goes into 32 four times. I have none left. I took out 50, then 20 more, then 4 more. That's 74.	I want to get to 592. 8 × 25 = 200 8 × 25 = 200 8 × 25 = 200 200 + 200 + 200 = 600 600 – 8 = 592 I had 75 groups of 8 and took one away, so there are 74 teams.

Using an Open Array or Area Model

1. After developing an understanding of using arrays to divide, students begin to use a more abstract model for division. This model connects to a recording process that will be formalized in the 5th grade.

1. 150 ÷ 6



Students make a rectangle and write 6 on one of its sides. They express their understanding that they need to think of the rectangle as representing a total of 150.

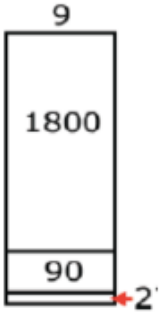
1. Students think, "6 times what number is a number close to 150?" They recognize that 6 × 10 is 60 so they record 10 as a factor and partition the rectangle into 2 rectangles and label the area aligned to the factor of 10 with 60. They express that they have only used 60 of the 150 so they have 90 left.
2. Recognizing that there is another 60 in what is left, they repeat the process above. They express that they have used 120 of the 150 so they have 30 left.
3. Knowing that 6 × 5 is 30, they write 30 in the bottom area of the rectangle and record 5 as a factor.
4. Student express their calculations in various ways:

a.
$$\begin{array}{r} 150 \\ -60 \quad (6 \times 10) \\ \hline 90 \\ -60 \quad (6 \times 10) \\ \hline 30 \\ -30 \quad (6 \times 5) \\ \hline 0 \end{array}$$

$150 \div 6 = 10 + 10 + 5 = 25$

b. $150 \div 6 = (60 \div 6) + (60 \div 6) + (30 \div 6) = 10 + 10 + 5 = 25$

2. 1917 ÷ 9



2. A student's description of his or her thinking may be:
I need to find out how many 9s are in 1917. I know that 200 x 9 is 1800. So if I use 1800 of the 1917, I have 117 left. I know that 9 x 10 is 90. So if I have 10 more 9s, I will have 27 left. I can make 3 more 9s. I have 200 nines, 10 nines and 3 nines. So I made 213 nines. 1917 ÷ 9 = 213.