5th Grade Assignment – Week #9 – Lecture #1

Group Assignment:

- *For Tuesday's group work*:
  You will need a long string to do the following problems. The length of the string should not be exactly measured, but it should be approximately 15 feet long. Your task is to discuss in your group a strategy for putting marks on the string such that it is sectioned into equal parts. You may not measure in order to do this. Here are the questions:
    - How can you place a mark on the string that accurately divides it into two equal segments?
    - How can you place marks on the string that accurately divide it into four equal segments?
    - How can you place marks on the string that accurately divide it into eight equal segments?
    - How can you place marks on the string that accurately divide it into three equal segments?
    - How can you place marks on the string that accurately divide it into six equal segments?
    - How can you place marks on the string that accurately divide it into twelve equal segments?
    - How can you place marks on the string that accurately divide it into five equal segments?
    - How can you place marks on the string that accurately divide it into ten equal segments?
- *For Thursday's group work*:
  You may remember that prime numbers are special. These are the numbers that only have two factors: 1 and itself. Write down all the prime numbers that are less than 100. (Maybe you can even find a few prime numbers that are greater than 100.)

Individual Work

- *Fractions*. We will give our work with fractions a rest for a few weeks.
- *U.S. Measurement.*
    - This should be the major focus for the week.
    - You will need the following tools for this work: tape measure, ruler, bathroom scale (for measuring heavier objects), food scale (or the equivalent, for measuring lighter objects), measuring cup, and containers that are one pint, one quart, and one gallon.
    - Your task is simply to measure lots of objects – various lengths/distances, weights, and volumes.
    - Be sure to always estimate or guess what you think the measurement will be, and then measure it accurately to see how good your guess was. Have a few people in your family guess – make a game of it!
    - Be sure to include a couple of objects where you measure all three aspects: length, weight, and volume. (It is an interesting challenge to figure out a method for measuring the volume of a solid object, such as a baseball.)

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- *Mental Math.*
  Practice mental math problems similar to the ones I give in the lecture, focusing especially on the ones that are harder for you. If they really are getting confused with this work with place value, then I highly recommend that you work thoroughly in this manner (this could take a lot of time!):
  - Practice counting backwards and forwards by 1's, 10's, 100's, and 1000's, but starting at large numbers, as shown below. With these examples, be sure that they don't write "...", but actually write all the in-between numbers. Also, I am counting up to 5000 each time just for means of comparison. You should count up to different numbers each time, and slowly work up to large numbers, such as 3,000,000.
    - Counting by 1's
      4970, 4971, 4972...4995, 4996, 4997, 4998, 4999, 5000.
      Then do the same thing backwards
      Then ask this: what is 5000-3, or 5000-8, or 5000-13, etc.?
    - Counting by 10's
      4760, 4770, 4780, 4790, 4800, 4810...4950, 4960, 4970, 4980, 4990, 5000.
      Then do the same thing backwards
      Then ask this: what is 5000-30, or 5000-80, or 5000-130, etc.?
    - Counting by 100's
      3700, 3800, 3900, 4000...4500, 4600, 4700, 4800, 4900, 5000.
      Then do the same thing backwards
      Then ask this: what is 5000-300, or 5000-800, or 5000-1300 etc.?
- *Practice Problems*. Do the following practice problems.

1. 392–28
2. 462–267
3. 602–343
4. 8006–2347
5. 47x32 (Use the short-cut method!)
6. 87x54
7. 234x516
8. Look for sums of ten in each column!

   274
   743
   146
   722
   457
   964
  + 648