5th Grade Assignments – Week #4

Notes for the Parents/Teachers:

- Regarding the "making change" problems, and "Mr. York's change game":
  - The more I do this, the more I become convince that this activity is perfect for 5th graders. It is definitely challenging, but (I think) the right amount of challenge for 5th graders.
  - As I often do, I started this topic with a question, and slowly have built up to understanding how change works, and then lastly (next week) I'll ask them to play my "change game".
  - Next week's group assignment includes this problem (don't give it to your child yet!):

    Example: Mr. York has this in his wallet:

    2 twenty-dollar bills
    1 five-dollar bill
    3 one-dollar bills
    2 quarters
    1 dime
    4 pennies

    At the store, he has to pay for a $6.42 bill. What should he give the cashier?
  - I plan on doing this topic for a couple more weeks.
  - Related to all of this, I very much encourage you to do mental math every day at home. Make it playful! Perhaps while driving in your car, or going for a walk, you ask "What is 200 minus 40?", and other mental math problems that I suggested earlier. (6x400, 50x90, 200-3, 6000-300, 5000-40, 56+9, 56+38, 83-78, etc.)
  - You can also use change problems as mental math. E.g., "How much change do you get back if you give a ten-dollar-bill for a $5.42 grocery bill?"
  - The ideal would be for you to practice the "change game" with your child when you actually go to the store. Although the art of making change seems to be a dying art, it's great math for this age kid.

Group Assignment for Tuesday:

Making Change (at the Cash Register).

Bill (Mr. York's friend) plays a different "change game" than what Mr. York plays. Bill always gives the cashier a single bill, which is larger than the cost of the bill. (Do you think I'm trying to confuse you with the word "bill" appearing three times in the previous sentence?) Solve these problems:

1. Bill paid for his $3.93 bill with a $5 bill. What did he get back for change?
2. Mr. York paid for his $3.93 bill with a $5 bill and 3 pennies. What did he get back for change? Why did he give the 3 pennies?

(Continued on next page →)

3. Bill paid for his $13.55 bill with a $20 bill. What did he get back for change?
4. Mr. York paid for his $13.55 bill with a $20 bill and a nickel. What did he get back for change? Why did he give the nickel?
5. Bill paid for his $23.90 bill with a $50 bill. What did he get back for change?
6. Mr. York paid for his $23.90 bill with a $50 bill and 4 one-dollar bills. What did he get back for change? Why did he give the 4 one-dollar bills?

Equivalent Fractions

7. Between everyone in your group, see how many fractions you can make that are equivalent to $^2/_3$. (Give yourselves a 2-minute time limit. Then report back to me and your tutor and tell us how many you came up with!)
8. Between everyone in your group, see how many fractions you can make that are equivalent to $^3/_8$. (Give yourselves a 2-minute time limit. Then report back to me and your tutor and tell us how many you came up with!)

Group Assignment for Thursday:

Adding Fractions

Instructions:

- Each of the below problems consists of two fractions that need to be added or subtracted.
- Each person in the group should choose one of the two fractions. (If you have more than two people in the group, then two people may be working with the same fraction.)
- With the fraction you chose, write down as many equivalent fractions as you can in three minutes.
- After the time is up, share your results with the others in the group. Correct any mistakes. (Remember that mistakes are part of the learning process!)
- Imagine that one of the original fractions and all of its equivalent fractions are on one page of paper, and the other original fractions and all of its equivalent fractions are on another page of paper. In blue pencil circle any common denominators that you see on the two pieces of paper. In pink pencil, circle the least (smallest) of the common denominators.
- Now look at the denominators of the two original fractions. What is the LCM of these two denominators? Is it the same as the least common denominator that you found above? It should be!
- Lastly, use the two fractions with the least common denominator (circled in pink!) to answer the addition or subtraction problem.

9. $\frac{1}{3} + \frac{2}{5}$
10. $\frac{3}{4} - \frac{3}{10}$
11. $\frac{2}{9} + \frac{5}{12}$

Individual Work

Notes for the Parents/Teachers:

- Note that the students can simply use the standard short-cut procedure (e.g., carrying, borrowing, long multiplication, etc.). What I did in the lecture was to give some of the thinking behind the standard procedure. I just wanted them to see that thinking through a more elaborate process. They don't need to replicate the more elaborate process; they can just practice the short version.
- If your child wants more of these kind of practice problems, then you can, of course, easily make up more of them on your own.
- Always be mindful with such practice problems, that the work helps to develop enthusiasm for learning math. It should never become a form of torture.
- I am writing each problem horizontally in order to save time and space. The student should first copy the problem into their practice book, written vertically, and do the problem in an organized manner so that they can follow their work later, if needed.

Solve the following problems.

1. 53+42
2. 68+84
3. 375+463
4. 97-25
5. 83-27
6. 635-378
7. 807-264
8. 43x5
9. 38x6
10. 235x4
11. 47x36

More Difficult Problems (only if there is an abundance of time and desire):

12. 87,234+4,895
13. 857+943+34+936
14. 704-528
15. 5,024-1,649
16. 86x97
17. 275x83