

## Reflecting on Class & the Reading

1. Read the section in the syllabus that explains how to organize your notebook, and describes post-class notes. After you have created your post-class notes for the first class:
  - a. Discuss one mathematical idea/issue from class that made sense to you.
  - b. Look up the definition for odd number in two different locations.
  - c. Look up the definitions for 2 mathematical terms that you don't remember.
  - d. List two questions that you have about things raised in the first class: at least one must be about a mathematical idea/issue raised in class.
  
2. Read the page in the coursepack that describes taking notes on the readings (rather than simply highlighting). After you create your reading notes for *Teaching Children Mathematics* respond to the following:

The authors provide a variety of arguments to support their contention for how mathematics teaching should change, and why. Discuss two of these arguments from the article that you find most convincing. Your discussion should be detailed enough to make sense to someone who did not read this article.

## Renaming Numbers

Before working on these problems, be sure to read the **general directions** for doing homework problems (coursepack page prior to WN-1).

You can rename (or represent) numbers in lots of different ways. An everyday example of this is money, for example \$25 can be represented as two \$10 bills and one \$5, or twenty-five \$1 bills, and so on. You can also do renamings without a context by using different operations, for example, consider the following ways of renaming quantity 107:  $10 \times 10 + 7$                        $(25 \times 4) + 3 + 4$                        $329 - 222$

3. Find at least 4 ways to represent \$25,317 using the following restrictions: you may only use combinations of 1 dollar bills, 10 dollar bills, 100 dollar bills, 1000 dollar bills, and 10,000 dollar bills.
4. A pack of gum contains 12 pieces of gum, and box of gum contains 12 packs, and a crate of gum contains 12 boxes. The gum company records quantities of gum by using 4 numbers with dashes between them. So, the number 1-2-0-11 means 1 crate, 2 boxes, 0 packs and 11 pieces of gum, which is 2027 pieces of gum (which the company would record as 0-0-0-2027. Thus 0-0-0-2027 and 1-2-0-11 are just 2 different ways to represent 2027 pieces of gum. Find 4 more ways to represent 2027 pieces of gum using the company's 4-number system.
5. Reflect on the two different contexts in problems 4 and 5, and the way you generated the different renamings in these two problems. In what ways were they similar, in what ways were they different. Was one easier than the other? Why or why not?
6. Using whole numbers and the operations, you can rename 7146 in a variety of ways. For example:  $7000 + 150 - 4$ , or  $2 \times 4000 - 900 + 146$ . You will create **10 different ways** to rename the quantity **7146** by using criteria below (restricting what digits you can use). Make these renamings as different as you can. [Note that the examples provided do **not** fit either set of criteria.]
  - a. For 5 of the renamings use only the digits 1, 4, 6, 7, along with zeros.
  - b. For 5 of the renamings, do not use the digits 1, 4, 6, or 7.