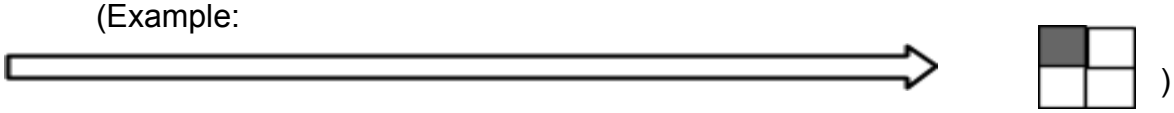
LEVEL 5 EXAMPLE

Problem of the Month Reflection: October

The last level I completed (as of October 27th) was Level B, which had to with equivalent fractions. The problem explained that in a video game, there are doors labeled with cards. These cards all have different fractions on them, and the video character must pass through them (6/8, 4/8, 6/9, 16/32, 21/28, 12/18, 6/12, 6/18). In order to pass through the doors, however, the character must place the cards in the correct pocket of his jacket, which are also labeled (3/6, 5/15, 8/12, 9/12). I figured that the way to determine which cards went in which pockets was to find out which fractions were equivalent. Therefore, I simplified all of the fractions (3/6=½, 5/15=⅓, 8/12=⅔, and 9/12=¾ for the pockets and 6/8=¾, 4/8=½, 6/9=⅔, 16/32=1/2 , 21/28=¾, 12/18=⅔, 6/12=½, and 6/18=2/6=⅓ for the doorways). Finally, because on the page the pockets were arranged so that two pockets were on the top half of a t-shirt and two were on the bottom, I drew a small box separated into four quadrants near each doorway illustration and colored in the quadrant in the same position the pocket it belonged in was.

(Example: )

Once I had done that, I could easily “write a note” to the person playing the video game explaining which cards went where by referring to the first page on which I showed my work. Basically, the cards to doors 4/8, 6/12, and 16/32 all belonged in the pocket marked 3/6 because they all equaled ½. In the pocket marked 5/15, door 6/18’s card belonged because both the fractions equaled ⅓. The cards 6/9, and 12/16 should have gone into the pocket marked 8/12, because they were all equal to ⅔, and in the pocket labeled 9/12, door cards 6/8 and 21/28 belonged because the three fractions were equivalent to ¾. Simply put, the cards belonged in the pockets they did because in each pocket, all the fractions were equivalent.

To solve this problem, I used my knowledge of fractions as well as division and multiplication. In order to simplify the fractions, I had to know multiples of certain numbers and understand that the same fraction can be written in many different ways--a concept that might be hard at first, but one that once understood seems quite simple and is *very* valuable. I also had to know multiples of numbers such as 2, 3, 4, 5, 6, 8, 16, etc., in order to notice the pattern of equivalent fractions I spotted, which was what made me realize that equivalent fractions were the key to this problem.