Lesson 67

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Objective
Students will add and subtract simple fractions.

Preparation
For each student: fraction pieces *(masters on M20 and M21)*

For the entire class: a piece of paper cut in half, and labeled One Half

Lesson Plan
Group students in threes and have them cut out the fractional pieces. The three different ways the fractional pieces are labeled will help them understand the different ways fractions can be described. Each "whole" is the same size so the fractions can be compared.

Hold up your piece of copier paper, with "One Half" written on it. Ask the class how your paper labeled "One Half" compares to theirs. (Yours is larger.)

Ask them how both pieces can be labeled "One Half" even though they are different in size. (Fractional parts have meaning in relation to the whole of which they are a part. For the problems the students will have, they can assume that the wholes are the same size.)

The progression of the problems is to help the students move from the concrete representation to the more abstract.

As you go through #1 – #14, have the students model the problems with their pieces.

Next, write a fraction such as 3/4 on the board. Show your students that it can be written as the sum of two fractions (3/4 = 1/4 + 2/4). Explain that this fraction can also be written as a subtraction problem (3/4 = 4/4 - 1/4).

Let your students tell you another way 3/4 can be written as the sum of two fractions (3/4 = 2/4 + 1/4) and another way it can be written as a subtraction problem (3/4 = 6/4 - 3/4, for example). Give them several fractions to "deconstruct" in this way.

As you deconstruct these fractions, have the students model the fractions with their pieces.

Stretch 67
Using the digits 0 - 9 each one time, fill in the blanks of this equation to make a true statement.

(___ x ___ x ___ x ___ x ___ x ___ x ___ x ___) + ___ + ___ = 15

Answer: The digits can be in any order inside the parenthesis as long as 8 + 7 or 9 + 6 are outside the parentheses.

Everything within the parentheses gets multiplied by 0, so that total value is zero. Therefore the numbers outside have to add to 15.