

## A TEACHER REFLECTS



### Investigating Signed Numbers

At the beginning of this phase, I paired students up and each was provided with a set of 20 centimeter cubes, 10 green and 10 pink. We immediately designated the green cubes as negative. Students had minimal integer background before starting this unit, and some knew that a  $(-)$  in front of a number signified “negative” and not “subtract.”

Most students preferred to make a number line on the top of their papers that went from  $(-10)$  to  $(+10)$  which helped them with Lesson 1. As we progressed through this lesson, many students questioned certain vocabulary words that they were not familiar with and I wrote the words and the explanation on the board. Some of the words were: negative, positive, sum, and product. I also added the symbol beside the word and kept this on the board for students to reference.

As students began modeling the problems using the color cubes, their confidence soared. Many of the quieter girls were willing to present their potential solutions on the overhead to their peers... and they were correct. They beamed!

When I asked them to demonstrate another way to obtain an answer of  $(+5)$ , Grace immediately offered  $8 + (-3)$ . She had noticed a pattern that enabled her to find the answer. I asked her another question to see if she understood the concept and could see past the “pattern.” She instantly figured out that  $15 + (-1)$  would be 14.

My ESL students began to get lost with the term “signed” numbers. I tried using this term to refer to “positives” and “negatives,” but they couldn’t get past the “plus/minus” terms. I often heard them asking one another, “How do you plus a minus?” Referring to a number line and having them move a cube on top of it was quite effective for these students. It also aided those students who clearly understood the concepts as they explained them to their tablemates. I was ecstatic to see the amount of responsibility the students took upon themselves to insure that their tablemates were successful! This was a “warm fuzzy” lesson for me.