Developing the Concept of Subtraction of Integers

If students have already used algebra tiles for subtraction of integers, then remind how they used the tiles to complete subtraction problems. Model a few problems to remind students of the importance of using zero pairs in subtraction.

Ask students to complete the activity sheet of 16 exercises. They should use the algebra tiles or the sheet of red and yellow squares in the communicator® to complete each problem. Students should record the answer using black or white squares and the numerical answer. Students should also write out the problem they are being asked to complete.

After students complete the activity sheet ask them the following questions to develop their concept of subtraction.

- How are problems 1 and 2 similar to problems 3 and 4? (You always have sufficient tiles of the right color to remove.)
- How are problems 1 and 2 different from problems 3 and 4? (One set involves negatives and one involves positive.)
- How do you know the sign of your answer in problems 1, 2, 3, and 4? (The sign is the same as the number you started with because you removed less than you had.)
- How are problems 5 and 6 similar to problems 7 and 8? (You are removing more than you started with so you need to use zero pairs. The answer is the opposite color.)
- How are problems 5 and 6 different from problems 7 and 8? (They are opposite colors but the same process is used.)
- How are problems 1-8 the same? (You always find the difference between the two integers.)
- How are the problems 1-4 different from problems 5-8? (In questions 1-4 you are not trying to remove more than the quantity you begin with, but in questions 5-8 you are.)
- How does this affect the answer? (When you try to remove more the answer is always the opposite of what you started with. When you don't have to use zero pairs the answer is always the same as what you started with.)
- How are problems 9-16 different from problems 1-8? (You are subtracting different types of numbers, such as negative from positive or positive from negative.)
- What do you know about subtraction from this activity sheet? (Answer will vary.)