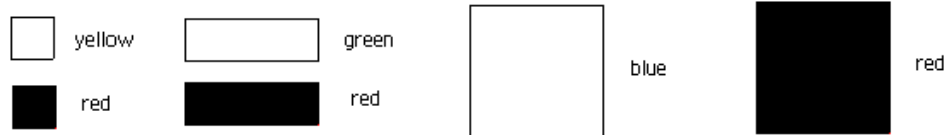


## Introduction to Subtraction with Algebra Tiles - Part II



Building upon the lesson on zero pairs the students will observe the following on the overhead projector.

Remind students that subtraction will be modeled by first placing some tiles on the table and then *removing* tiles from the table.

- Place 4 yellow tiles and then remove 2 yellow tile. How many yellow tiles are left? (2)
- Place 5 red tiles and then remove 4 red tiles. How many red tiles are left? (1)

Review with students that you are placing more yellow or red tiles on the table than you are trying to remove. This should be easy.

Have students model this with the *Yellow-Red Unit Square Template* in their communicator.

- Show 4 yellow tiles. Remove 1 yellow tile by erasing the yellow tiles. How many yellow tiles left? (3)
- Show 8 yellow tiles. Remove 5 yellow tiles by erasing the 5 yellow tiles. How many yellow tiles left? (3)
- Show 5 red tiles. Remove 3 red tiles by erasing the 3 red tiles. How many red tiles left? (2)
- Show 6 red tiles. Remove 2 red tiles by erasing the 2 red tiles. How many red tiles left? (4)

Ask students to write an observation down for what they see happening so far.

Take out all the small unit squares from the algebra tiles.

- Place 3 red tiles on the communicator. I would like to remove 2 yellow. First let's add some zero pairs to the table. Add two zero pairs and ask students if this is still equal to 3 red tiles (or if the value has changed)? Ask students to remove two yellow tiles. What is the answer? (5 red tiles)
- Place 4 red tiles on the communicator. I would like to remove 3 yellow. First let's add some zero pairs to the table. Add three zero pairs and ask students if this is still equal to 4 red tiles (or if the value has changed)? Ask students to remove three yellow tiles. What is the answer? (7 red tiles)
- Place 3 yellow tiles on the communicator. I would like to remove 4 red tiles. First let's add some zero pairs to the table. Add four zero pairs and ask students if this is still equal to 3 yellow tiles (or if the value has changed)? Ask students to remove four red tiles. What is the answer? (7 yellow tiles)
- Place 1 yellow tiles on the communicator. I would like to remove 5 red tiles. First let's add some zero pairs to the table. Add five zero pairs and ask students if this is still equal to 1 yellow tiles (or if the value has changed)? Ask students to remove five red tiles. What is the answer? (6 yellow tiles)

Have students model this with the *Yellow-Red Unit Square Template* in their communicator.

- Show 3 yellow squares. Remove 5 red square.
- Show 4 yellow squares. Remove 3 red squares.
- Show 1 red squares. Remove 6 yellow squares.
- Show 5 red squares. Remove 3 yellow squares.

Ask students to make an observation about the what they see happening with the tiles when they are trying to remove the opposite color from the table.

This time we will begin with a certain number of one tile and try to remove more than that number from the table.

- Place 3 red tiles on the communicator. I would like to remove 5 red tiles. First let's add some zero pairs to the table until we have 5 red tiles on the table. Add two zero pairs and ask students if this is still equal to 3 red tiles (or if the value has changed)? Ask students to remove five red tiles. What is the answer? (2 yellow tiles)
- Place 5 red tiles on the communicator. I would like to remove 8 red tiles. First let's add some zero pairs to the table until we have 8 red tiles. Add three zero pairs and ask students if this is still equal to 5 red tiles (or if the value has changed)? Ask students to remove eight red tiles. What is the answer? (3 yellow tiles)
- Place 4 yellow tiles on the communicator. I would like to remove 10 yellow tiles. First let's add some zero pairs to the table until we have 10 yellow tiles. Add six zero pairs and ask students if this is still equal to 4 yellow tiles (or if the value has changed)? Ask students to remove ten red tiles. What is the answer? (6 red tiles)
- Place 1 yellow tiles on the communicator. I would like to remove 5 yellow tiles. First let's add some zero pairs to the table until we have 5 yellow tiles. Add four zero pairs and ask students if this is still equal to 1 yellow tiles (or if the value has changed)? Ask students to remove 5 yellow tiles. What is the answer? (4 red tiles)

Have students model this with the *Yellow-Red Unit Square Template* in their communicator.

- Show 2 yellow squares. Remove 5 yellow squares.
- Show 3 red squares. Remove 6 red squares.

Ask students to complete *Subtracting Integers Using Models III* and the *Yellow-Red Unit Square Template*. Complete only column 3.

Ask students to look at their *Subtracting Integers Using Models III* and make an observation about patterns they see.