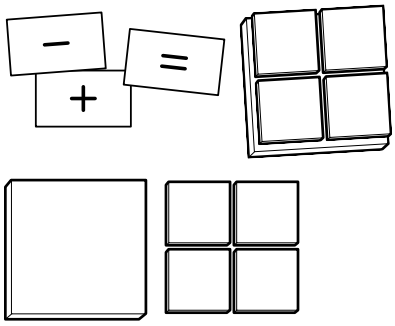
Number and Operations
Ages 5–9

Adding and Subtracting with Squares

Goals:

- Develop number sense for whole numbers
- Use grouping of 2's, 5's, and 10's with models and pictures
- Use area, region, and set models of fractions to explore part/whole relationships in context
- Develop fluency with single-digit addition and corresponding differences using modeling, composing, and decomposing quantities
- Create, model, and solve problems that use addition, subtraction, equal grouping, and division into fraction form
- Create and solve problems using modeling, composing, and decomposing quantities



Objective: Create, model, and solve problems that use addition, subtraction, equal grouping, and division into fraction form

Demonstrate addition and subtraction using the small and the large squares. Create several + signs, several – signs, and several = signs on index cards.

Addition – To begin, place a large yellow square on the table and ask the children, "How many small yellow squares are needed to make one large yellow square?" At first, you may want to place the small squares on top of the large square to show how many are needed to create a shape of equal size. Count the small squares to discover that it takes 4 small squares to equal 1 large square. To demonstrate further, talk through the addition function using the index cards. For example, 1 small white square + 1 small white square = 2 small white squares. Then 2 small white squares + 1 small white square = 3 small white squares. 3 small white squares + 1 small white square = 4 small white squares. Another example could be 2 small green squares + 2 small green squares = 4 small green squares. You could also discuss fractions at this point by saying 4 small yellow squares make 1 large yellow square, so 1 small square is 1 out of 4 squares or ¼ of the large square, and 2 green squares covers ½ the large green square.

Subtraction – To begin, build a large square using 4 small squares and count how many small squares there are. Then, talk through the subtraction function using the index cards. For example, there are 4 small squares, but if we take one away how many do we have? Demonstrate to the children that 4 small squares – 1 small square = 3 small squares, and that 4 small squares – 2 small squares = 2 small squares.

Encourage the children to suggest other addition and subtraction combinations using the small and large squares.