

# Using the Array Flash Cards to Develop Math Language

## Connecting Multiplication, Division and Fractions

For example, when viewing the 6 x 3 array...

### 1) To learn the multiplication facts and to reinforce the meaning of "X" (while viewing an array)

"6 columns of 3 are 18" or "6 groups of 3 are 18"

"3 rows of 6 are 18" or "3 groups of 6 are 18"

We can also encourage children to describe how they might *break up the array* into smaller parts or partial products (using the distributive property) to find the total quickly.

When looking at the columns of 3:

"I can fold the array in half and see 3 columns of 3 are 9 and  $9 + 9$  is 18."

When looking at the rows of 6:

"2 groups of 6 are 12, and 1 more group of 6 makes 18."

### 2) To develop understanding of division as the inverse of multiplication (while viewing the product written on the back of the array), student describes what is on the front from memory, and then checks.

#### Packaging division or Partitioning Division:

"18 broken up into groups of 3, gives us 6 groups of 3."

"18 divided into groups of 3, gives us 6 groups of 3."

#### Sharing division:

"18 shared with 3 rows, gives each row 6."

"18 shared with 3 groups, gives each group 6."

"18 divided among 3 groups equally, gives each group 6."

Or use 6 as the divisor, instead of 3.

### 3) To see one fractional part of the set (viewing the array card)

"One third of 18 is 6." "One sixth of 18 is 3."

### 4) To name the amount for multiple parts of the set (viewing the array card)

"Two thirds of 18 are 12." "Five sixths of 18 are 15."

### 5) To review area concept (viewing the array or looking only at the back)

"The area of a 3 by 6 rectangle is 3 rows of 6, or 18 square units."

### 6) To review perimeter concept (viewing the array or looking only at the back)

"The perimeter of a 3 by 6 rectangle is  $3 + 6$ , twice, or 18 units"

"The perimeter of a 3 by 6 rectangle is two 3's + two 6's or 18 units"