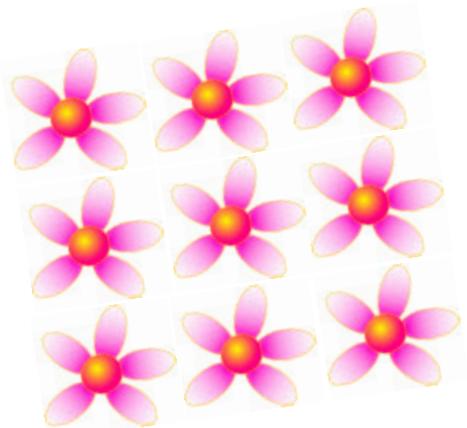# Using
Rectangular Arrays
in the Mathematics Classroom

to teach

multiplication

square numbers

factors

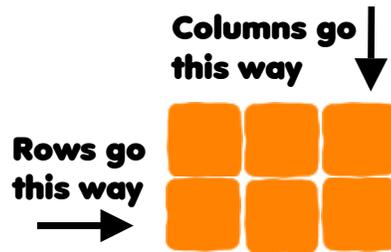prime numbers

composite numbers

Grades 2 - 5

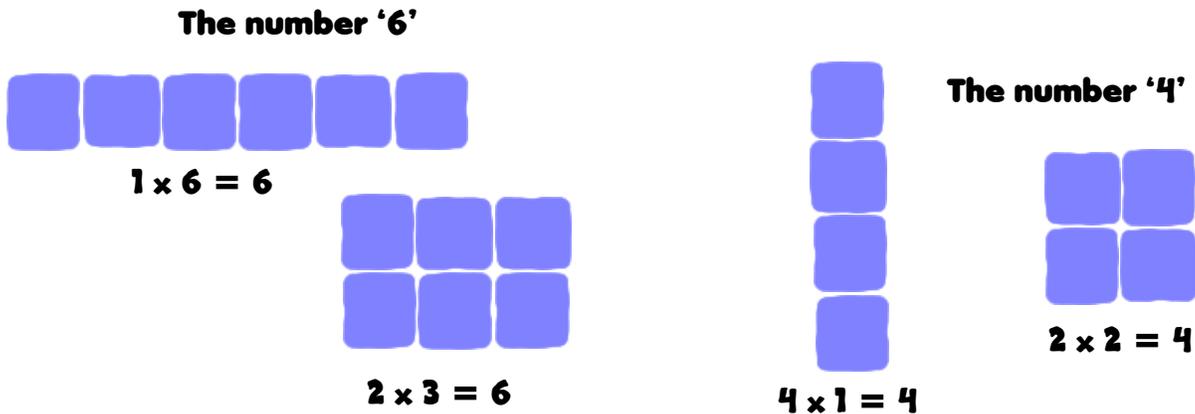### written by Karyn Hodgens

Grades 2 - 3

To see the video version of this lesson visit: www.kidnexions.com/kidsmath/lessons

Rectangular array: An arrangement of objects into rows and columns that form a rectangle.

Columns go
this way

Rows go
this way

1 Students use tiles to make rectangular arrays for given numbers.

The number '6'

$1 \times 6 = 6$

$2 \times 3 = 6$

The number '4'

$4 \times 1 = 4$

$2 \times 2 = 4$

2 Students record the arrays in a table and look for patterns.

R	C	A
1	6	6
2	3	6
4	2	8

R = rows

C = columns

A = area

Question: If we know the number of rows and the number of columns, can we determine the area?
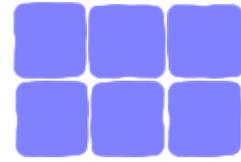
3 **Discuss factors and products.**

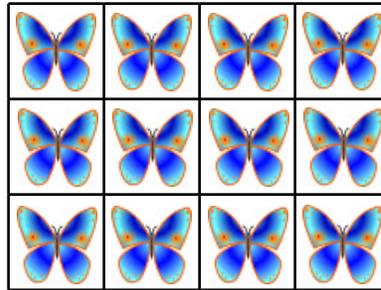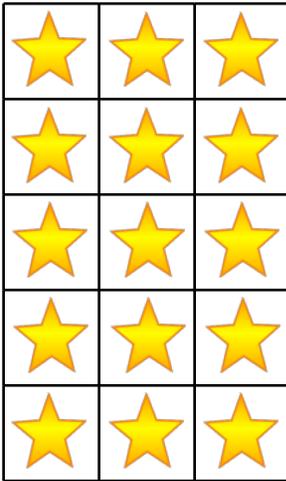factors : the numbers that are multiplied together to get another number
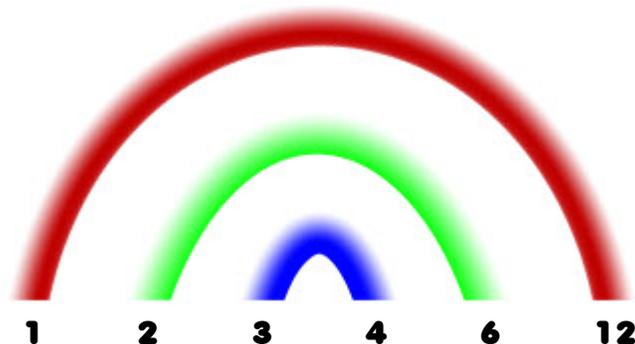
product : the result of multiplication

$2 \times 3 = 6$

4 **Students use square inch graph paper, stickers, and rubber stamps to make arrays.**

5 **Create a 'Multiplication Arrays' bulletin board where students cut out and post their arrays under the corresponding number.**

EXTENSION: Make factor rainbows!

Factors for the number 12
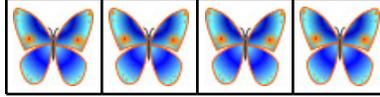
1   2   3   4   6   12

Grades 4 - 5

To see the video version of this lesson visit: www.kidnexions.com/kidsmath/lessons

1 Students use square inch graph paper, stickers, and rubber stamps to make arrays.

2 Create a bulletin board where students cut out and post their arrays under the corresponding number.

! For the purpose of this activity, congruent rectangles are considered the same and should only be represented one way on the bulletin board.

is the same as

3 Students look for patterns in the numbers and arrays. They will notice that some numbers only have one array (prime numbers) and other numbers have more than one array (composite numbers).
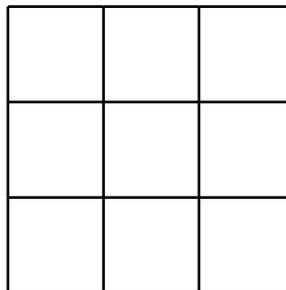
prime number a number that has exactly two factors, 1 and itself.

Note: The number '1' is neither prime nor composite.

composite number a number that has more than two factors.

This 3 x 3 array makes a square. It has the same number of rows and columns. We call the number of tiles used to make the square a 'square number'.

'9' is a square number

Thank you for checking out my TPT freebie! This is a fun activity that I've done for many years in my classroom. It's hands-on, allows for some great discussions on number theory (properties of numbers), and it makes a great bulletin board!

I also hope you had an opportunity to check out the video that goes along with the lesson. I like putting the videos together and have started a collection of my preK - 6 grade math lessons. Feel free to check those out, too!

I love feedback, so share any thoughts you may have. I always respond.

Happy Teaching!

Karyn

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