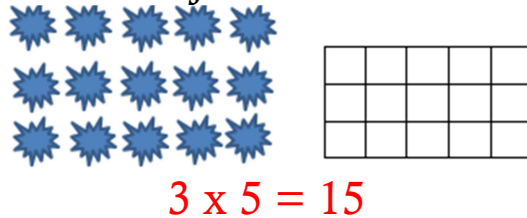


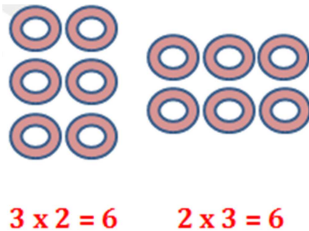
Array

Arrangement of objects in rows and columns.



Commutative Property

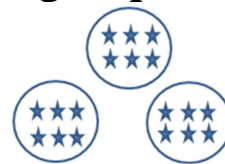
Rotate a rectangular array 90 degrees to demonstrate that factors in a multiplication sentence can switch places.



Equal groups

With reference to multiplication and division; one factor is the number of objects in a group and the other is a multiplier that indicates the number of groups.

There are 3 equal groups of 6.



Distribute

With reference to the distributive property, Example: $12 \times 3 = (10 \times 3) + (2 \times 3)$. The 3 is the multiplier for each part of the decomposition.

$$\begin{array}{ccc} 10 & + & 2 \\ 3 & \boxed{\begin{array}{|c|c|} \hline 30 & 6 \\ \hline \end{array}} & & 30 + 6 = 36 \end{array}$$

$$\begin{array}{c} \text{3} \text{ (10 + 2)} \\ \text{(3 x 10) + (3 x 2)} \\ \hline 30 \quad + \quad 6 \end{array}$$

Divide/Division

Partitioning a total into equal groups to show how many equal groups add up to a specific number.

Example: $15 \div 5 = 3$

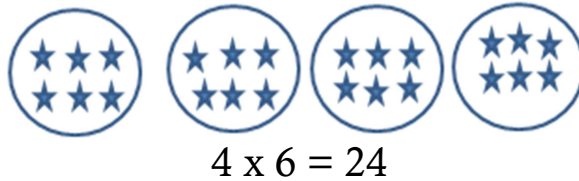
Factors

Numbers that are multiplied to obtain a product.

$$\begin{array}{c} \underline{5 \times 4 = 20} \\ \swarrow \quad \searrow \\ \text{factors} \end{array}$$

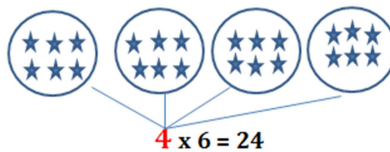
Multiplication/Multiply

An operation showing how many times a number is added to itself.



Number of groups

Factor in a multiplication problem that refers to the total equal groups.



Parentheses

Symbols () used around an expression of numbers within an equation.

$$(2 + 4) \times 3$$

$$6 \times 3$$

$$18$$

Product

The answer when one number is multiplied by another.

$$6 \times 3 = 18$$

↑
Product

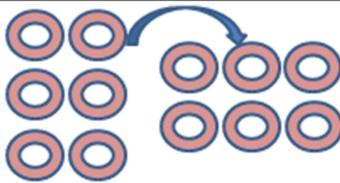
Quotient

The answer when one number is divided by another.

$$4 \overline{)32} \quad \text{8}$$

Rotate

Turn, used with reference to turning arrays 90 degrees.



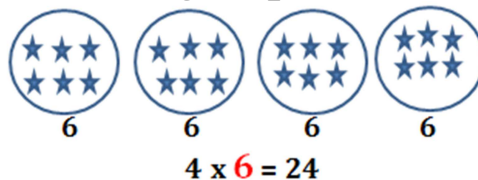
Row/Column

In reference to rectangular arrays.



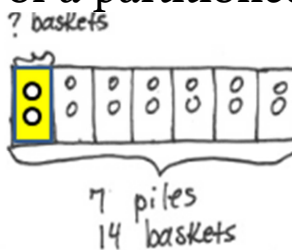
Size of groups

Factor in a multiplication problem that refers to how many in a group.



Unit

One segment of a partitioned tape diagram.



Unknown

The missing factor or quantity in multiplication or division.

$$3 \times \underline{\quad} = 15$$

$$\underline{\quad} \times 4 = 8$$

$$25 \div 5 = \underline{\quad}$$

Add 1 unit/Subtract 1 unit

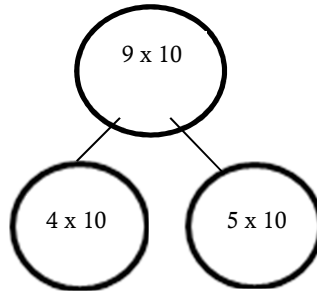
Add or subtract a single unit of two, ten, etc.

Expression

Example: 6 x 4

Number Bond

Illustrates part-part-whole relationship.



Ones, twos, threes, etc.

Units of one, two or three.

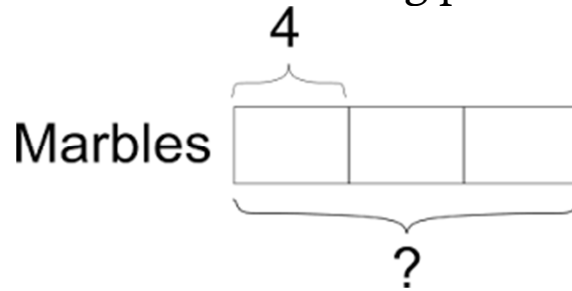
Repeated Addition

Adding equal groups together.

Example: $2 + 2 + 2 + 2$

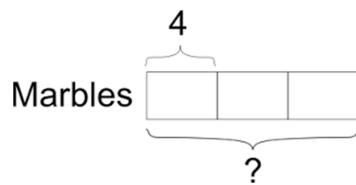
Tape Diagram

A method for modeling problems.



Value

How much.



What's the value of each unit? (4 marbles)