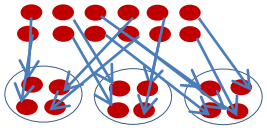
Division Strategies

Equal Groups: Divide to find the number of equal groups.

There are 12 marbles. We need 4 marbles in each bag. How many bags do we need? ***3***

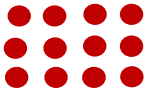
Divide to find the number in each group.

There are 12 marbles. We put an equal amount into each of the 3 bags. How many marbles are in each bag? ***4***



Arrays:

1. Count out the given number using objects.
2. Make a row with ___ objects in the row.
3. Continue to make as many equal rows as you can.



3 rows of 4

Think Multiplication!

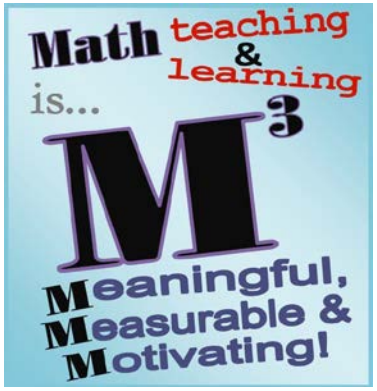
Multiplication and division are related. When working with division, sometimes it makes sense to "think multiplication". 21 ÷ 3 could be thought of as "3 times what equals 21?".

Grade 3 Mathematics

What's In?	What's Out?
Building conceptual understanding with manipulatives	~~Learning the steps, algorithm, without conceptual understanding~~
Explaining why the answer is correct and how they arrived at the answer	~~Giving the "number" as the correct answer and moving on without explanations~~
Understanding there are multiple strategies to arrive at a solution and attempting to solve a problem in more than one way	~~Thinking there is only one method to finding a solution to a problem~~
Applying mathematical understandings to new situations in order to solve a problem	~~Applying their understanding of mathematical concepts to only similar problems to find a solution~~

Long Beach Unified School District
K-5 Math Curriculum Office
Teacher Resource Center
1299 E. 32nd St., Room D
Signal Hill, CA 90755

Math Tools and Strategies Your Child Will Use in Grade 3



This brochure illustrates mathematical strategies students will be learning throughout the school year. Additional Parent Resources can be found at www.lbschools.net under Mathematics and Family Resources.

Pamela Seki
Assistant Superintendent of Curriculum, Instruction and Professional Development

Lisa Dougan
K - 5 Mathematics Curriculum Leader

Multiplication Strategies

What is Multiplication? Multiplication is the operation of repeated addition of the same number.

Repeated Addition: Repeated Addition is repeatedly adding equal amounts.

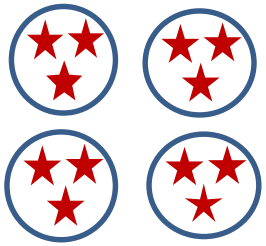
These examples are for 3 × 4

3 + 3 + 3 + 3
4 + 4 + 4

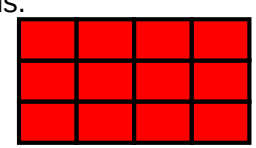
Equal Groups/Sets:

3 groups of 4

4 groups of 3



Arrays: An array arranges objects in equal rows and columns.



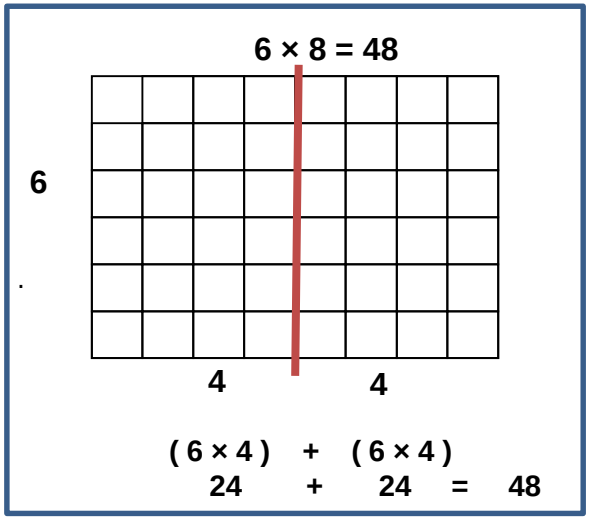
3 × 4 = 12

Multiplication Properties

Commutative Property: Changing the order of the factors does not change the product.

Since 4 × 7 = 28
Then 7 × 4 = 28

Distributive Property: The distributive property lets you separate numbers into parts so that the numbers are easier to work with.



Associative Property: The Associative Property states that when the grouping of the factors is changed, the product is the same. It is also called the Grouping Property of Multiplication.

3 × (2 × 4) = (3 × 2) × 4

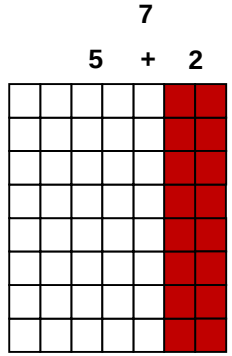
3 × (2 × 4) =
3 × 8 = 24

(3 × 2) × 4 =
6 × 4 = 24

Multiplication: Area/Array Models

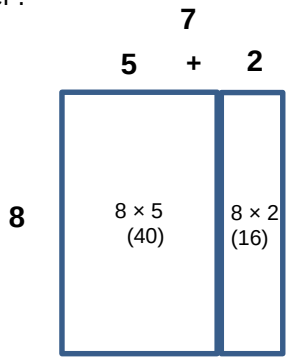
The area/array model for multiplication and the distributive property are used to solve multiplication problems.

Model for 8 × 7:



8 × 7 =
(8 × 5) + (8 × 2) =
40 + 16 =
56

This is the same model without squares. It is called an "open model".



Students will progress from area/array models to working with partial products and using the distributive property.

8 × 7
(8 × 5) + (8 × 2)
40 + 16
56