

# MATH

## Chapter 7: Multiplication Facts and Strategies

Dear Family,

During the next few weeks, our math class will be learning how to multiply with the factors 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12.

You can expect to see homework that provides practice with multiplication facts and strategies, and about the properties of multiplication.

### Vocabulary

**Associative Property of Multiplication** The property that states that when the grouping of factors is changed, the product remains the same.

**Distributive Property** The property that states that multiplying a sum by a number is the same as multiplying each addend by the number and then adding the products.

**Multiple** A number that is the product of two counting numbers

- Homework due date: **Friday, Nov. 22nd**
- Feel free to contact me with any questions at [diana.charaf@archimedeian.org](mailto:diana.charaf@archimedeian.org)

**Complete homework daily based on the schedule provided below:**

Monday 11/18

Tuesday 11/19

Wednesday 11/20

Thursday 11/21

Friday 11/22

HDU - 9TA on IXL

6W7 - 9DF on IXL

HXY - MPE on IXL

7VP - YPF on IXL

No HW - Happy Thanksgiving

## Multiplication Properties

### 1- Commutative Property of Multiplication:

The commutative property of multiplication says that you can multiply numbers in any order without changing the answer.

$$a \times b = b \times a.$$

$$3 \times 4 = 4 \times 3$$

The commutative property of multiplication can save you time when you learn your multiplication facts. Every time you learn one fact, you've really learned two facts!

### 2- Identity Property of Multiplication:

The identity property of multiplication says that any number times **1** is equal to that number. Because of this, **1** is called the **multiplicative identity**.

$$8 \times 1 = 8$$

$$27 \times 1 = 27$$

$$\text{So, } a \times 1 = a.$$

### 3- Associative Property of Multiplication:

The associative property of multiplication says that you can group factors in different ways without changing the product. It is also called the Grouping Property of Multiplication.

Let's try  $2 \times 4 \times 3$  as an example.

You can group  $2 \times 4$  together and complete that multiplication first.

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

$$= 8 \times 3$$

$$= 24$$

Or you can group  $4 \times 3$  together and complete that multiplication first.

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

$$= 2 \times 12$$

$$= 24$$

The factors are grouped differently, but the product is the same.

$$\text{So, } (2 \times 4) \times 3 = 2 \times (4 \times 3)$$

- You can use the associative property to make problems easier.

Let's look at an example:

$$3 \times 5 \times 8$$

Look for a way to make a multiple of 10. You can multiply  $5 \times 8$  to get 40.

So, group those factors. Then multiply to solve.

$$3 \times (5 \times 8)$$

$$= 3 \times 40$$

$$= 120$$

#### 4- Distributive Property:

The Distributive Property states that multiplying a sum by a number is the same as multiplying each addend by the number and then adding the products.

$$\begin{aligned} & 6 \times 7 && \text{Think: } 7 = 5 + 2 \quad (\text{Multiply each addend by } 6) \\ = & 6 \times (5 + 2) \\ = & (6 \times 5) + (6 \times 2) \\ = & 30 + 12 \\ = & 42 \end{aligned}$$

$$\begin{aligned} & 8 \times 9 && \text{Think: } 8 = 4 + 4 \quad (\text{Multiply each addend by } 9) \\ = & (4 + 4) \times 9 \\ = & (4 \times 9) + (4 \times 9) \\ = & 36 + 36 \\ = & 72 \end{aligned}$$

You can use the distributive property to help multiply large numbers. Let's try it with  $6 \times 57$ .

First, split 57 up into smaller pieces.

$$\begin{aligned} & 6 \times 57 \\ = & 6 \times (50 + 7) && \text{Then, use the distributive property to solve!} \\ = & (6 \times 50) + (6 \times 7) = 300 + 42 = 342 \end{aligned}$$