



Dear Parents,

Over the next several weeks, we will be learning about **place value** and **whole number operations** in math! The information below will help you to support your child as they learn these exciting, yet important fourth grade math skills.

The GOAL:

By the end of the unit, your child should be able to **add, subtract, multiply, and divide whole numbers.**

Add and Subtract Whole Numbers

Students must be able to add and subtract whole numbers. Students will learn a variety of ways to add and subtract and your child will be able to pick the strategy that they feel most comfortable with using when solving problems. Below are some examples of the ways your child will learn how to add and subtract.

Traditional Addition

$$\begin{array}{r} 1 \ 11 \\ 76,025 \\ + 28,476 \\ \hline 104,501 \end{array}$$

$$76,025 + 28,476 = 104,501$$

Traditional Subtraction

$$\begin{array}{r} 2 \ 111 \\ \cancel{3},218 \\ - \cancel{1},593 \\ \hline 1,625 \end{array}$$

$$3,218 - 1,593 = 1,625$$

Properties of Addition

Commutative Property of Addition states the order of addends does not matter.

$$7 + 8 = 15 \text{ is the same as } 8 + 7 = 15.$$

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

$$32 \times 4 = (30 \times 4) + (2 \times 4)$$

$$4 \times 14 = 4 \times (10 + 4)$$

$$(4 \times 10) + (4 \times 4)$$

Associative Property of Addition states you can group addends in any order. This property is used when there are three or more addends.

$$(2 + 3) + 4 = 9$$

$$2 + (3 + 4) = 9$$

$$(2 + 4) + 3 = 9$$

This example uses the **Commutative Property** first to change the order of the addends!



Multiply and Divide Whole Numbers

Students must be able to multiply and divide whole numbers. Students will learn a variety of ways to multiply and divide and your child will be able to pick the strategy that they feel most comfortable with using when solving problems. Below are some examples of the ways your child will learn how to multiply and divide.

Traditional Multiplication

$$\begin{array}{r} 14 \\ 218 \\ \times 6 \\ \hline 1,308 \end{array}$$

$$218 \times 6 = 1,308$$

Partial Products Multiplication

$$\begin{array}{r} 218 \\ \times 6 \\ \hline 48 \text{ (} 6 \times 8 \text{ ones)} \\ 60 \text{ (} 6 \times 1 \text{ ten)} \\ \hline 1,200 \text{ (} 6 \times 2 \text{ hundreds)} \\ \hline 1,308 \end{array}$$

$$218 \times 6 = 1,308$$

Traditional Division

$$\begin{array}{r} 17R1 \\ 5 \overline{)86} \\ -5 \downarrow \\ \hline 36 \\ -35 \\ \hline 1 \end{array}$$

$$86 \div 5 = 17R1$$

Partial Quotients Division

$$\begin{array}{r} 17R1 \\ 5 \overline{)86} \\ \underline{50} \quad 10 \text{ (} 5 \times 10 \text{)} \\ \underline{36} \\ \underline{25} \quad 5 \text{ (} 5 \times 5 \text{)} \\ \underline{11} \\ \underline{10} \quad +2 \text{ (} 5 \times 2 \text{)} \\ \underline{1} \quad 17 \end{array}$$

$$86 \div 5 = 17R1$$

Grade 4 Math: PA Core Math Standards in Unit 1

- CC.2.1.4.B.1: Apply place-value concepts to show an understanding of multi-digit whole numbers.
 CC.2.14.B2: Use place-value understanding and properties of operations to perform multi-digit arithmetic.

-- KEY MATH VOCABULARY --

Associative Property: Property of Addition or Multiplication that states you can group addends in any order. This property is used when there are 3 or more addends.

Commutative Property: Property of Addition that states the order of addends does not matter.

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.

Inverse Operations: Operations that undo each other, such as addition & subtraction and multiplication & division.

Multiply: When you combine equal groups, you can multiply to find how many in all, the inverse of division.

Place Value: The value of the place a digit holds in a number.

Product: The results of when one number is multiplied by one or more numbers.

Quotient: The result when one number is divided by another number.

Subtrahend: A quantity or number to be subtracted from another.

For example: $29 - 11 = 18$, 11 is the subtrahend.