

Questions, Cues, Advance Organizers/Activate Prior Knowledge! Open your brain folder and write the following problem on your *What I Know* page. $96 \times 3 = (90 \times 3) + (6 \times 3)$. Are they equal? Prove or disprove using pictures and words. Then, share with a partner.

Math Vocabulary: Content words are bolded and are defined through context or example.

Show students how to define word using context clues.

Properties of Operations

ASK QUESTIONS!

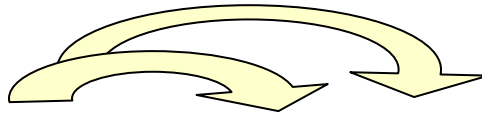
Number and box each paragraph one at a time. For each paragraph, students ask questions that are important (go back to objective) and underline the answers in that paragraph.

1

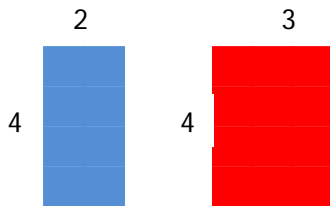
The **associative property** will help us understand mathematical relationships among numbers and operations using multiplication and addition. It is important to remember that when we use the **associative property**, we must *always* use the **order of operations**.

Show students the relationship between the words *associative* and *distribute*.

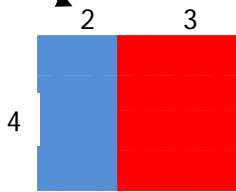
Review.



The **associative property** illustrated: $[4 \cdot (2 + 3) = (4 \cdot 2) + (4 \cdot 3)]$



$$[4 \cdot (2 + 3) = (4 \cdot 2) + (4 \cdot 3)]$$



In other words, the **associative property** states:

multiplying a sum by a number = multiplying each addend by the number and then adding the products

$$2(3+5) \quad \text{or} \quad (2 \times 3) + (2 \times 5)$$

These **two expressions** mean the same thing.

We know that a **variable expression**, like a phrase, has no equal sign (=).

Properties of Operations

The **distributed property** helps

- to rearrange parentheses in solving equations. $2(3+5) = (2 \times 3) + (2 \times 5)$
- to *simplify* expressions.

Simplify:

$$\begin{array}{r} 3 \times 56 \\ (3 \times 50) + (3 \times 6) \\ 150 + 18 \\ 168 \end{array}$$

Look at these examples using the **distributed property**, including equations and variable expressions:

1. $2(2 + 3) = 2 \times 2 + 2 \times 3$
2. $3 \times 3 + 3 \times 2 = 3(3 + 2)$
3. $10 \times 14 = (10 \times 10) + (10 \times 4)$

The **distributed property** helps with understanding mathematical relationships.

PRACTICE!

Use the distributed property to solve the equation below.

1. $4(3 + 2)$

Simplify the expression using the distributed property.

2. 64×7