NAME_____

Module 1   Number Sense
Lesson 4   Distributive Properties

Lesson Objectives

- Identify the Distributive Property by using physical models.
- Apply the Distributive Properties to simplify computations with whole numbers.

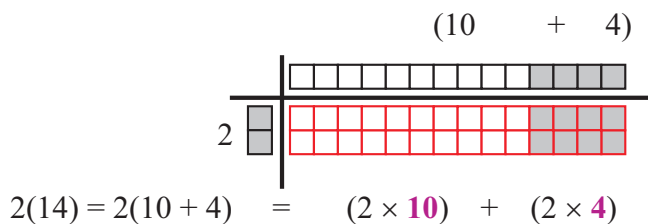**Subtopic 1**   **Distributive Property Model 1-Digit Numbers**

The Distributive Property of Multiplication over Addition states that multiplying a number and a sum is the same as multiplying the number by each part of the **sum** and then **adding**, $4(5 + 2) = (4 \times 5) + (4 \times 2)$.

$4 \times 7 = 28$ **20** + **8** = **28**
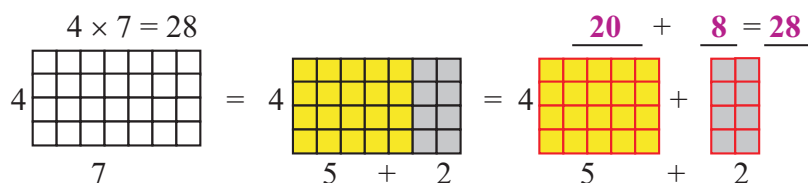
Solve the following products using the Distributive Property as shown.

1 $6 \cdot 5 = 6(3 + 2)$ **2** $3 \cdot 9 = 3(4 + 5)$
     18 + 12 = 30   **12 + 15 = 27**

Subtopic 2   **Distributive Property Model 1-Digit Number Times 2-Digit**

$(10 \quad + \quad 4)$

2

$2(14) = 2(10 + 4) \quad = \quad (2 \times \underline{10}) + (2 \times \underline{4})$
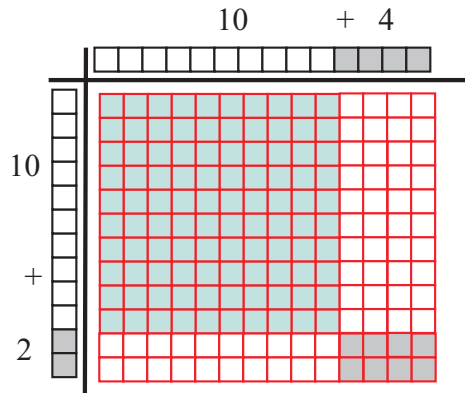
Solve the following products using the Distributive Property as shown.

3 $4(12) = 4(10 + 2)$ **4** $3(13) = 3(10 + 3)$
     40 + 8 = 48   **30 + 9 = 39**

Subtopic 3   **Distributive Property Model 2-Digit Numbers**

$$10 \qquad + \quad 4$$

$$(12)(14) = (10 \times \mathbf{10}) + (10 \times \mathbf{4}) + (2 \times \mathbf{10}) + (2 \times \mathbf{4})$$

Solve the following products using the Distributive Property as shown.

5 $(11)(14) = (10 + 1)(10 + 4)$
$\mathbf{100 + 40 + 10 + 4 = 154}$

6 $(12)(15) = (10 + 2)(10 + 5)$
$\mathbf{100 + 50 + 20 + 10 = 180}$

Subtopic 4   **Distributive Property of Multiplication Over Subtraction**

The Distributive Property of Multiplication over **Subtraction** states that multiplying a number and a difference is the same as multiplying the number by each part of the difference and then subtracting, $4(5 - 2) = \mathbf{(4 \times 5) - (4 \times 2)}$.

Use the Distributive Property of Multiplication over Subtraction to find the product.

7 $5(17)$ $\mathbf{5(20 - 3) = 100 - 15 = 85}$

8 $12(25)$ **Possible answer: $12(30 - 5) = 360 - 60 = 300$**

Subtopic 5   **Applications of the Distributive Property**

Use the Distributive Property to solve the following.

9 Crater Rim Auditorium has fifty-two rows with thirty-three seats in each. How many seats are there altogether? **1716 seats**