Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

UNIT 6 LESSON 12

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| AIM: | SWBAT apply the distributive property |

**THINK ABOUT IT!**

The expression 2(a + 4) means, ‘2 x (a + 4).’ Using this understanding, write two equivalent expressions to 2(a + 4) and explain how you came up with the two expressions.

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**Test the Conjecture**

*Test the Conjecture #1)* Write an expression that is equivalent to 5(d + 1) using the distributive property

*Test the Conjecture #2)* Write an expression that is equivalent to 2(3d + 2w – 1) using the distributive property

Conjecture

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**PARTNER PRACTICE**

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| *Bachelor Level* |

1. Rewrite each expression as an equivalent expression in expanded form and by using the distributive property. The first one has been done for you!

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| **Expression** | **Expanded Form** | **Simplified Expression** |
| *2(w + 6)* | *(w + 6) + (w + 6)* | *2w + 12* |
| 3(m + 2) |  |  |
| 4(t – 3) |  |  |
| 2(3z + 2w + 4p) |  |  |

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| *Master Level* |

1. An equilateral triangle has a side length of (2n + 3). Write two equivalent expressions to represent the perimeter of the triangle.

**INDEPENDENT PRACTICE**

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| *Bachelor Level* |

1. Is 4(y + 3) equivalent to 4y + 3?  Explain why or why not.

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1. Apply the distributive property to write an equivalent expression for each expression below.
   1. 2(9 + f)
   2. (5 + w)5
   3. ¼(h – 8)
2. Which expression or expressions are equivalent to 3(8p – 2). Circle all that apply.
   1. 24p + 6
   2. 24p – 2
   3. 24p – 6
   4. (8p – 2) + (8p – 2) + (8p – 2)
   5. 3(8p) – 3(2)

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| *Master Level* |

1. For each expression below, write an equivalent expression by applying the distributive property.
   1. ½(12p – 6w + 7y)
   2. 2d(9m – 13)
   3. (32h + 64)
2. Which expression is equivalent to 16a + 24b?



1. Write two equivalent expressions that represent the area of the rectangle below



1. Ms. Peterson wrote the expression below on the chalkboard for her class. She asked the students to write an equivalent expression using no more than one set of parentheses. 4(3x + 5y + 2z) + 3(x – z)
   * Tom wrote 12x + 20y + 8z
   * Jenna wrote 5(3x + 4y + z)
   * Chris wrote 15x + 20y – 5z

Which, if any, of the three students wrote an expression that is equivalent to Ms. Peterson’s expression.

**Show your work to prove which expressions, if any, are equivalent.**

1. A square with one side length represented by an expression is shown below.

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Use the properties of operations to write three different equivalent expressions to represent the lengths of the other three sides of the square. One of your expressions should contain only two terms.

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| *PhD Level* |

1. Below is a scale model of a swimming pool with a diving section.

30 m

x m

20 m

**Part A**

Based on the model, write two expressions that can be used to measure the area of the surface of the pool.

**Part B**

The cost to create a cover for the pool that fits exactly over the surface of the pool is $4.50 per square meter. Write an expression using no more than two terms to represent the total cost of creating a cover for the pool above.

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**EXIT TICKET**

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| Self-assessment | I mastered the learning objective today. | I am almost there. | Need more practice and feedback. |
| Teacher feedback | You mastered the learning objective today. | You are almost there. | You need more practice and feedback. |

1. Javi distributed 3(n + 2) and got 3 x n + 2. Is his expression equivalent to the original expression? Prove it. If it is not equivalent, write the correct expression.

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1. Use the distributive property to simplify the expression (12 + 10x)