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

UNIT 3 LESSON 3

**AIM**: SWBAT write equivalent expressions using the distributive property with negative coefficients

In my own words this means I will be able to…

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**THINK ABOUT IT!**

Simplify the expression. Prove that your expression is equivalent using substitution.

5 – 4(-2b – 7)

**CFS for top quality work**

* + Expression is **rewritten using addition**
  + Area models are drawn with **coefficient** representing *number of groups* and the *quantity* (the amount in each group)
  + Expression is **expanded** or **factored** as indicated
  + Expression is checked using substitution distributive property

Key Point

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| Changing subtraction to \_\_\_\_\_\_\_\_\_\_\_\_ when applying the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ property reduces sign errors |

Interaction with New Material

**Ex. 1) Simplify the following expression: –(3d – 4) – 4(5 – 2d)**

**CFS for top quality work**

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**PARTNER PRACTICE**

**CFS for top quality work**

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| *Bachelor Level* |

1. Draw a model and write an expression that is equivalent to the expression -3(n – 2).
2. Draw a model and write an expressions that is equivalent to the expression -3(-8 – x).
3. Rewrite the expression using the distributive property -10m + 15 and drawing a model. Write two different equivalent expressions, one with a positive coefficient and one with a negative coefficient.

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| *Master Level* |

1. Write an equivalent expression for 3n – 4(n – 5)

5. Janai solved the problem above using the following work:

3n – 4(n – 5)

3n – 4n – 20

-1n – 20

Do you agree or disagree with her work? If you agree, describe the steps that she took. If you disagree, explain her mistake.

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**INDEPENDENT PRACTICE**

**CFS for top quality work**

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  + Expression is checked using substitution distributive property

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| *Bachelor Level* |

1. Model the expression -4(k – 1) and write an equivalent expression
2. Model and write two expressions that are equivalent to the expression -3(-4 – 2n).
3. Write an equivalent expression for 4 – 3(2n + 5)
4. Write an equivalent expression using the distributive property -4n + 12 with a negative coefficient.

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| *Master Level* |

1. Draw a model and write an equivalent expression:

-3(-4b + 12c - 11)

1. Write at least four different expressions that are equivalent to -18 + 6n.
2. Write the expression in standard form by expanding and collecting like terms.
3. Find and explain the error in the following work:

2n - 4(-3n + 4g – 2)

2n – 12n + 16g – 8

-10n + 16g – 8

-2(5n – 8g + 4)

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| *PhD Level* |

1. Pretend that you are a test maker. Create four multiple choice answer (one has to be correct) for the problem below. Explain the error that each answer choice addresses.

*“Write an equivalent expression for -4n – 3(-2n + 3)”*

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

**CFS for top quality work**

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**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) Ms. Chibbaro asked her students to find an expression equivalent to 7 – 3(4 – 2x) – 10x.

Jon had the following work on his paper:

7 – 3(4 – 2x) – 10x **(Step 1)**

4(4 – 2x) – 10x **(Step 2)**

16 – 8x – 10x **(Step 3)**

16 – 18x **(Step 4)**

One step in Jon’s work is incorrect. Find and explain the error. Then write your own expression equivalent to the one given by Ms. Chibbaro.

2) Write two expressions that are equivalent to the expression -4y – 16