Name: _____ Date: Aug 21 Hour: 6th

Unit 1 Day 3: Substituting in Expressions

Focus Question: How do I substitute correctly?

A. Review Combining Like Terms Partner Practice (Rally Coach again)

Partner Writing and Explaining	Expression to Simplify And Your answer	Extra Thinking/Work Space
A	$4x - 8 + 10x + 7 + 2$ $14x + 1$ or $1 + 14x$	
B Ms. Millett	$-9 + 4x - 2$ $-11 + 4x$	$-9 - 2 = -11$
A John	$9x - 14$ Already Simplified	$9x - 14$
B	$8 - 5x + 10 + 3x$ $-2x + 18$ or $18 - 2x$	

B. How to Substitute and Evaluate Correctly

1. Brainstorm: When you hear the word substitute, what do you think?

   sports
   teachers

2. **Substitute** in math means replace a variable (letter) with a #.

   Evaluate in math means **substitute a value and simplify**.

3. To substitute correctly, you need to remember what operation is occurring between the coefficient and the variable. The operation is multiplication. The higher you go in math, the more you should use parenthesis to mean multiplication. Thus, when we substitute, we always use ( ) around our substitution to remind ourselves to multiply if necessary.

4. To evaluate correctly, you need to use the order of operations.
   If you have substituted correctly,
   the calculator will CHECK them for you.

*Notice the G for grouping symbols.
Operations inside parenthesis or brackets,
in numerators or denominators,
under radicals, etc fall in this category.

terms / expressions

Grouping Symbols
Exponents
Multiplication
Divison
Addition
Subtraction

C. Practicing Together

Evaluate the algebraic expressions for the given values of each variable.

1) $2c - d$ at $c = 6, d = -3$

$2(6) - (-3)$ ← put in calc.

$12 + 3$

15

2) $\frac{xz}{y}$ at $x = 5, y = 2, z = 4$

$\frac{(5)(4)}{(2)}$ $\quad \frac{20}{2}$ $\quad 10$

3) $m^2 + n$ at $m = 2, n = 7$

$(2)^2 + (7)$

$4 + (7)$

11

4) $p + q + r$ at $p = 3, q = -8, r = 1$

$(3) + (-8) + (1)$

-4

D. Partner Practice (NEW: Sage and Scribe)

Evaluate when x = 2, a = 3, and b = -4.

Sage/Scribe rolls	**Person A is the SAGE** (they do the talking through the problem) **Person B is the SCRIBE** (they write what the sage says and can prompt with words if the sage gets stuck or they think it is incorrect and give encouragement)	**Person B is the SAGE** (they do the talking through the problem) **Person A is the SCRIBE** (they write what the sage says and can prompt with words if the sage gets stuck or they think it is incorrect and give encouragement)
Expression	$3b^2 - 16 + x$	$4a + 6b - 7 + 2a$
Scribe's Work		