Name: _____ Date: Aug 20 Hour: 2nd

Unit 1 Day 2: Expressions

Focus Question: What are like terms in an expression?

A. Review

1. Using the term $4x$
   a. What is the coefficient? 4
   b. What is the variable part? X
   c. Is it a constant? Explain. No, it has a letter.
   d. What is it expanded? 4 • X
2. Multiplication is repeated addition.
3. A longer way to write $4x$ is X + X + X + X

B. Expressions

When terms are linked using addition or subtraction signs, we have what is called an expression.
$4x$ is a term but $x + x + x + x$ is an expression with 4 terms.

1. Tell how many terms are in each of the following expressions.
   a. $4x - 2$ (1, 2) 2
   b. $5x^3 + 2x^2 - 7x + 3$ (1, 2, 3, 4) 4
   c. $-6x^4$ 1
   d. $2x^5 - 3x^2 + 8$ (1, 2, 3) 3
2. Fill in the table together to practice knowledge of expressions and terms.

Expression	$6x + 2 - 7x$	$2x^4 - 3$	$-2x^2 + 4x - 3 + 7x^2$
# of terms	3	2	4
Coefficients	6, 2, -7	2, -3	-2, 4, -3, 7
Constants	2	-3	-3

* The sign goes with the number behind it. "Minus" and "negative" can be confusing because we use the same symbol to mean both words (subtraction is really just adding a negative). The first expression is said "Six x plus 2 minus seven x" but the coefficient on the third term is "negative seven."

3. Practice with a partner (Rally Coach Again)

Partner that Writes and Explains	A	B
Expression	$2x^4 + 6x - 8x + 5$	$-3m^2 - 8m + 2$
Number of Terms	4	3
Coefficients	2, 6, -8, 5	-3, -8, 2
Constants	5	2

C. Simplifying Expressions (Simplify means Write in fewer symbols)
Sometimes expressions can be simplified. For example $2x + 5x + 4$ simplifies to $7x + 4$. It went from 3 terms to two terms.
Sometimes expressions cannot be simplified. For example $3x^2 + 7x + 8$ cannot be simplified. It is three terms and must remain 3 terms.

1. When someone says "combine like terms…"

   "Like terms" have the same variable part (exact same letter & exponent

   And you "combine" the coefficents.

2. Explain why each expression below CANNOT be simplified:

   a. $3x^2 + 6m^2$ diff. letters

   b. $5x^2 - 7x$ diff. exponents

   c. $4x + 2$ var. no var.

3. Simplify each expression below (use a calculator for positives and negatives!) You should always write a simplified form of the same expression underneath the original expression.

   a. $4x - 10x + 2x$ $-4x$? 4-10+2

   b. $-8 + 5$ -3

   c. $10 - 14 + 3$ -1

   d. $-3x - 2x$ $-5x$? -3-2

4. Write each expression below in its most simplified form. If it already is in its most simplified form, explain why.

   a. $5x^2 + 3x - 8$

   Already simplified
   the variable parts are diff.

   b. $-6x + 2x - 9 + 7x + 14$

   $3x + 5$? -6+2+7

   c. $4x + 5x - 10$

   $9x - 10$? 4+5