NAME _____

Module 2 Writing and Simplifying Algebraic Expressions
Lesson 4 Combining Like Terms

guided notes

Lesson Objectives

- Recognize like terms.
- Use like terms to simplify expressions.
- Add and subtract polynomials both vertically and horizontally.

A **term** is a number, a variable, or a product of numbers and variables.

A **coefficient** is the numerical factor of a term.

Like terms are terms whose variable factors are exactly the same.

To combine like terms, combine the **coefficients**.

1. Simplify: $3a + 5a + 6b - 3b$ **$8a + 3b$**

In the expression, $2ab^2 + 3a^2b + 4a^2b$, the terms that have exactly the same variable factors are **$3a^2b + 4a^2b$**.

The expression $2ab^2 + 3a^2b + 4a^2b$ simplifies to **$2ab^2 + 7a^2b$**.

2. Identify like terms: $3x$, $2xy$, $-3x$, $-y$, $4xy$, $2y$

$3x$ and $-3x$, $-y$ and $2y$, $2xy$ and $4xy$

Like terms are terms that contain the same variables with corresponding variables having the same **exponent**.

3. Identify like terms: $2x^2y^3$, $4x^3y^2$, $3x^3y^2$

$4x^3y^2$ and $3x^3y^2$

A polynomial is a monomial, or the sum of monomials.

A monomial is an expression that consists of just one term.

Polynomials can be added and subtracted vertically.

When problems are arranged vertically, similar terms are in the same columns.

When subtracting polynomials, add the opposite of each term of the second polynomial to the first polynomial.

4 Subtract: $(x^2 - 5x + 6) - (x^2 - 5x - 6)$ 12