**Algebra**

Algebraic expressions often look like long lines of numbers and letters:

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* This expression has 3 distinct parts. Each of these parts is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and they are separated by + or – signs.
* As you can see, there are two distinct parts to every term, the ‘number part’ and the ‘letter part’.
* The \_\_\_\_\_\_\_\_\_\_\_\_\_ refers to the number (with its sign). It is always written to the left of the letters. Note that the term ‘c’ has no number. When a variable is written with no coefficient, the coefficient is always ‘1’. A ‘+c’ has a coefficient of ‘+1’.
* The \_\_\_\_\_\_\_\_\_\_\_\_\_ refers to the letter(s) and their respective powers. It is written to the right of the coefficient, usually in alphabetical order.
* An expression with one term is called a 🡪 \_\_\_\_\_\_\_\_\_\_, two terms🡪 \_\_\_\_\_\_\_\_\_, three terms 🡪\_\_\_\_\_\_\_\_\_\_, more than three terms \_\_\_\_\_\_\_\_\_\_.

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| **TERM** | 4x | -3c2d4 | -6ba3 | 9 | -y | a |
| **COEFFICIENT** |  |  |  |  |  |  |
| **VARIABLE** |  |  |  |  |  |  |

Of the above terms, 4 are ‘variable’ terms and 1 is a ‘constant’ term. The term, \_\_\_\_\_\_\_, is called a constant term because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Like and Unlike Terms**

2x, -121x, 5x, x, and -2x are all ‘like terms’ since their variables are all \_\_\_\_\_\_\_\_.

9xy2, 5y2x, -10xy2, xy2, -y2x are ALSO like terms because their variables are all \_\_\_\_\_\_\_\_ (when put in alphabetical order).

2x2 and 4x are ‘UNLIKE TERMS because the variables \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_ are not the same.

**Terms can only be added or subtracted if they are ‘LIKE TERMS’. Unlike terms can not be added or subtracted.**

**Practice: Matching Game A**

* Using a line, connect the like terms (one from list A and one from list B).
* Remember, like terms have the exact same variables with the exact same exponents. Only the coefficients can be different.

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| **List A** | **List B** |
| **3x** | **5n2** |
| **6ab** | **9** |
| **-8n2** | **-4m3n** |
| **m3n** | **9mnp** |
| **-11p** | **-2yx** |
| **4** | **5x3** |
| **16mnp** | **P** |
| **-4x3** | **7a2b** |
| **-8a2b** | **7ab** |
| **3xy** | **-4x** |

**Practice: Grouping Activity B**

* Circle all the monomials. Underline all the binomials. Draw a rectangle around the trinomials.

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**Collecting (Adding Like Terms)**

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| **To simplify an expression by collection like terms, you:**   1. Determine which terms are like 2. Rearrange (optional) \*remember the sign (+/-) stays with the term 3. Add the coefficients \*remember the sign (+/-) stays with the term 4. Keep the variable the same |

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| Example A  1x + 3x - 5 + 7x - 4x + 2  = 1x + 3x + 7x - 4x -5 + 2  = 7x – 3 | Example B  1x2 + 3x+ 7x - 2x2 + 2 + 4 |

**Practice: Simplify the following expressions by collecting like terms**

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| a. | b. |
| c. | d. |
| e. | f. |
| g. | h. |
| ANSWERS: a) , b) , c) , d) , e), f) , g) , h) | |