

# Expressions & Equations

6th Grade

Vocabulary, the properties, combining like terms and the balance rule.

## ANATOMY OF AN EXPRESSION

$$7x^2 + 3x - 5$$

| |  
coefficient variable

|  
constant

Three terms, separated by + and -. A term is a number, a variable, or both multiplied.

## THE PROPERTIES

**Commutative** order does not matter

$$a + b = b + a \cdot ab = ba$$

**Associative** grouping does not matter

$$(a+b)+c = a+(b+c)$$

**Distributive** share the multiplier out

$$a(b + c) = ab + ac$$

**Identity** leaves it unchanged

$$a + 0 = a \cdot a \times 1 = a$$

**Inverse** undoes it

$$a + (-a) = 0 \cdot a \times 1/a = 1$$

## COMBINING LIKE TERMS

$$5x + 3y - 2x + 7 + y = 3x + 4y + 7$$

Like terms have the same variable to the same power.  $3x$  and  $3x^2$  are not alike. Add the coefficients only. The variable part never changes.

### EVALUATING

Substitute first, then follow order of operations. If  $x = -3$ , then  $2x^2 = 2(9) = 18$ , not  $-18$ .