

Chapter 3 Algebraic Expressions

Dear Family,

In this chapter, your student will learn about algebraic expressions. Some of the skills your student will practice are:

- simplifying, expanding, and factoring algebraic expressions
- translating verbal descriptions into algebraic expressions
- solving real-world problems using algebraic reasoning

Activity

Simplifying expressions with fractional coefficients is a skill that students will use to solve problems in science and mathematics classes. You can help your student understand this skill with the following activity.

- Write an expression with several terms with fractional coefficients, such as $\frac{1}{2}a + \frac{2}{3}b + \frac{1}{4}a - \frac{1}{6}b$. Rewrite each term and the sign in front of it on a separate note card or small piece of paper. If the first term is positive, write a plus sign in front of it.

$+\frac{1}{2}a$	$+\frac{2}{3}b$	$+\frac{1}{4}a$	$-\frac{1}{6}b$
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- Re-order the cards so that the like terms (terms with the same variable) are adjacent.
- Add or subtract the coefficients of the like terms, using a piece of scratch paper if necessary.

$$\frac{1}{2}a + \frac{1}{4}a = \frac{3}{4}a \qquad \frac{2}{3}b - \frac{1}{6}b = \frac{1}{2}b$$

Write the result: $\frac{1}{2}a + \frac{2}{3}b + \frac{1}{4}a - \frac{1}{6}b = \frac{3}{4}a + \frac{1}{2}b$.

- Repeat the activity with different expressions.

Vocabulary to Practice

You can use the **commutative property of addition** to rewrite the algebraic expression $0.7x + 1.5 + 0.2x$ as $0.7x + 0.2x + 1.5$. To simplify it, combine like terms to get $0.9x + 1.5$.

To **expand** the algebraic expression $0.1(12a + 10b)$, use the distributive property to write it as $0.1(12a) + 0.1(10b)$, then simplify each term to get $1.2a + b$.

To **factor** the algebraic expression $16x + 12y$, factor the greatest common factor, 4, from each term. $16x + 12y = 4(4x + 3y)$.



Online Resources

For additional Parent Resources my.hrw.com