

# Family Letter

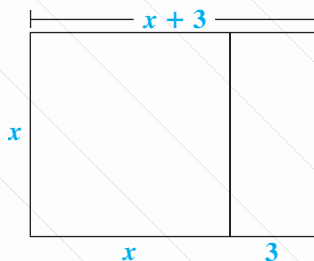
Dear Student and Family Members,

Our class is about to begin a new topic of study in mathematics, one in which students create, work with, and simplify *algebraic expressions*. Much of the work of this chapter may feel familiar to you if you recall your own study of algebra.

Algebra is one of the most powerful tools of mathematics. Part of its usefulness—and even beauty—is the way algebra allows you to state and solve many problems with little effort. Here is an example:

The cost of a movie is \$4.50 for each adult plus half of the adult price for each of four children, less your \$3 coupon. How much will you pay? The answer is  $\$[4.50x + 2.25(4) - 3]$ , where  $x$  is the number of adults.

In this chapter, we will begin by learning to multiply expressions like  $x(x + 5)$  and  $(x + 1)(x + 5)$  by referring to a *geometric model*. For example, to find the area of the large rectangle below, you can multiply the length by the width, or  $x(x + 3)$ . However, we can also find the area of the square,  $x \cdot x$  or  $x^2$ , and add the area of the small rectangle,  $x \cdot 3$  or  $3x$ , to get  $x^2 + 3x$ . This shows that  $x(x + 3) = x^2 + 3x$ .



**Vocabulary** Along the way, we'll be learning about these new vocabulary terms:

**binomial**

**expanding**

**like terms**

## What can you do at home?

Throughout this chapter, students will work with concrete situations and geometric models so that they can develop a sense of *why* their calculations with symbols work the way that they do. You can encourage a deeper understanding by asking your student to explain his or her work to you, using both geometric models and symbols.