

Unit 6

Family Letter

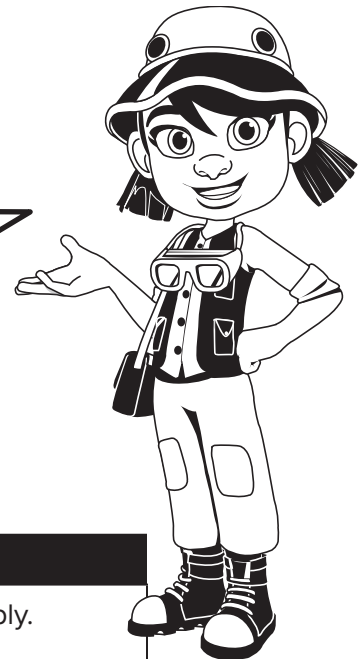
Dear Family,

In this unit, Multiplication Strategies with Multi-Digit Numbers, your child will multiply by multiples of 10, 100 and 1,000, estimate products and use the distributive property. He or she will also multiply a whole number of up to four digits by a 1-digit number and multiply two 2-digit numbers.

STEM Career Kid for this Unit

Hi, I'm Maya.

I want to be a geologist. I will use math in my job when I study Earth's materials, such as rocks and minerals. I can use multiplication to find the amount of a valuable material in a certain location.



What math terms will your child use?

Term	Student Understanding
compatible number	a number close to the factor that is easier to multiply.
Associative Property of Multiplication	the grouping of factors does not change the product
Distributive Property of Multiplication	the product of two factors is equal to the sum of the products of one factor and each addend of the decomposed factor
partial products	numbers that represent a portion of the product of two numbers; add partial products to find the product



What can your child do at home?

Have your child practice multiplying multi-digit numbers. Tell your child to roll 4 number cubes to create a 3-digit factor and a 1-digit factor. Have your child use a multiplication strategy he or she learned in class to find the product of the two factors. Ask your child to explain how he or she found the product.

What Will Students Learn in This Unit?

Multiply by multiples of 10, 100 and 1,000

Your child will use basic facts and number patterns to multiply with multiples of 10, 100 and 1,000.

Example:

300 has two 0s after the 3, so there will be two 0s after the product of the basic fact, 12.

$$p = 4 \times 300$$

$$p = 1200$$

Estimating Products

Your child will use compatible numbers to help them estimate the product of two numbers. Compatible numbers are numbers close to the actual factor that are easy to multiply. For example, 15 is a compatible number for 13.

Using the Distributive Property to Multiply

Your child will practice using the Distributive Property of Multiplication to solve multiplication equations. The essential understanding is that a factor can be decomposed and its parts multiplied by the other factor.

Example:

$$5 \times 7 = (5 \times 5) + (5 \times 2)$$

$$5 \times 7 = 25 + 10$$

$$5 \times 7 = 35$$

Using Partial Products to Multiply Two 2-Digit Factors

Your child will learn how to use partial products to multiply two 2-digit factors. The first step is to decompose two factors into numbers that are easier to multiply. Next, the product of each part, or the partial products, are found and then added to find the product of the two 2-digit factors. For many students, using an area model makes multiplying 2-digit numbers more visual and easier.

Example:

	20	+ 7
10	200	70
+		
8	160	56

$$\begin{array}{r} 18 \\ \times 27 \\ \hline 200 = 10 \times 20 \\ 70 = 10 \times 7 \\ 160 = 8 \times 20 \\ + 56 = 8 \times 7 \\ \hline 486 \end{array}$$