

## Unit 6

# Family Letter

Reveal  
**MATH**<sup>®</sup>

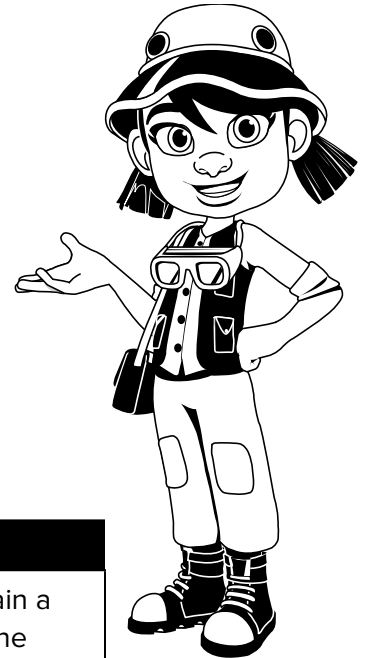
Dear Family,

In this unit, *Multiply Decimals*, your child will use representations and patterns to multiply whole numbers by decimals and decimals by decimals.

### 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 find the weight of boulders. I'll show students how I will multiply with decimals in my work.



### What math terms will your child use?

Term	Student Understanding
factor	a number that is multiplied by another number to obtain a product; for example, in the equation $5 \times 0.9 = 4.5$ , the numbers 5 and 0.9 are factors
pattern	something that is arranged to follow a rule
partial products	numbers that represent a portion of the product of two numbers; add partial products to find the product
generalization	a statement formed by observing a pattern



### What can your child do at home?

Help your child develop fluency with the steps used to multiply numbers. Students will learn that multiplying decimals is similar to multiplying whole numbers. Practice multiplying whole numbers at home with your child. Have your child teach you how to find the products of whole numbers.

# What Will Students Learn in This Unit?

## Multiplying by Powers of 10

Your child will learn how to multiply a decimal factor by a power of 10. For an expression such as  $3.4 \times 10^3$ , the exponent 3 tells by how many factors of 10 to multiply the number. In this case, multiply 3.4 by three factors of 10.

$$3.4 \times 10^3 = 3.4 \times 10 \times 10 \times 10 = 3,400$$

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## Estimating Decimal Products

Your child will learn how to estimate the product of two decimals. Before solving a problem, an estimate can be made that can later be used to check the reasonableness of an answer. The calculations below show how to find a range of reasonable answers for  $9.4 \times 6.2$ .

$$\begin{array}{c} 9.4 \times 6.2 = 58.28 \\ \swarrow \quad \searrow \\ 9 \times 6 = 54 \quad 10 \times 7 = 70 \end{array}$$

An estimate for the product is between 54 and 70. The product, 58.28, is a reasonable answer because it is between 54 and 70.

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## Generalizing Multiplication with Decimals

Your child will use patterns to make generalizations about multiplying decimals. Students will learn how to use the solution from one multiplication equation to solve other related equations. In the equations below, the first factor and the second factor in all three equations have the same digits. The products are related by a power of 10.

*Example:*

$$51 \times 26 = 1,326$$

$$5.1 \times 26 = 132.6$$

$$51 \times 2.6 = 132.6$$

$$5.1 \times 2.6 = 13.26$$