

KEY CONCEPT OVERVIEW

Lessons 34 through 38 focus on representing and solving multi-digit multiplication problems. Students use different methods to work with two-digit by two-digit multiplication problems.

You can expect to see homework that asks your child to do the following:

- Represent and solve multiplication expressions by using **area models**, **partial products**, and the **distributive property** (as shown in the Sample Problem below).
- Demonstrate knowledge of the **associative property of multiplication**.
- Use the standard algorithm to solve two-digit by two-digit multiplication problems.

SAMPLE PROBLEM (From Lesson 38)

Use the distributive property to express 32×53 as two partial products. Solve.

2	53 2×53	$32 \times 53 = (2 \times 53) + (30 \times 53)$	53 $\times 32$
30	53 30×53		$\begin{array}{r} 106 \\ + 1,590 \\ \hline 1,696 \end{array}$

$$\begin{array}{r} 53 \\ \times 2 \\ \hline 106 \end{array}$$

$$\begin{array}{r} 53 \\ \times 30 \\ \hline 90 \\ + 1,500 \\ \hline 1,590 \end{array}$$

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Together with your child, look back at the multiplication work he did at the beginning of the module. Chances are he will be surprised at how much he’s learned! Ask him what success makes him the most proud. For example, perhaps he struggled at first with using the area model to model multiplication, but now he understands it.
- Prompt your child to talk about her favorite method for solving two-digit by two-digit multiplication (area model, partial products method, distributive property, or multiplication algorithm). Ask her to explain why that method is her favorite.
- Continue to practice basic facts for addition, subtraction, multiplication, and division. The goal is to know the facts by heart.

TERMS

Associative property of multiplication: When multiplying three or more numbers, the product will be the same regardless of how the numbers are grouped. For example, $6 \times 3 \times 8 = (6 \times 3) \times 8 = 6 \times (3 \times 8)$ illustrates the associative property.

Distributive property: A property of multiplication that can be used to create an easier problem. For example, consider that 6 fours = 5 fours + 1 four or $6 \times 4 = (5 \times 4) + (1 \times 4)$.

Partial products: The result of decomposing a multiplication expression into smaller parts. For example, we can decompose 24×6 into the partial products of 20×6 and 4×6 .

MODELS

Area Model: A model used to help solve multiplication and division problems.

