

# Chapter 4

## Multiply with One-Digit Numbers

$$\begin{array}{r} 34 \\ \times 2 \\ \hline 68 \end{array}$$

Study Buddy

Dear Family,

Today my class started the **Multiply with One-Digit Numbers** chapter. I will be exploring multiples of 10, 100 and 1,000. I will learn to estimate products by rounding. I will also be learning about the Distributive Property of Multiplication and how to use models and partial products to multiply. Here are my vocabulary words that I will be using during my lessons.

Love, \_\_\_\_\_

p.s. Look on the back of this letter to find some quick practice tips that we can do together in the car, along with an activity and books for us to read at home.

## Vocabulary

**multiple:** a multiple of a number is the product of that number and any whole number

15 is a multiple of 5 because  $3 \times 5 = 15$ .

**multiplication:** the operation of repeated addition of the same number

$$2 + 2 + 2 = 3 \times 2 = 6$$

↓
↙
↓

**factor**    **product**

**factor:** a number that is multiplied by another number; also a number that divides into a whole number evenly

**product:** the answer to a multiplication problem

**estimate:** a number close to an exact value; an estimate indicates about how much

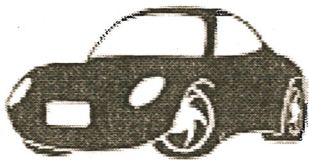
An estimate for \$4.99 is \$5.

## At Home Activity

Materials: quarters, dimes, nickels, pennies



- Use dimes to practice multiplying by 10.
- Multiply quarters by breaking them down into 2 dimes and 1 nickel.
- Show an amount with the coins; then round to the nearest 10 cents.



## Travel Talk

While driving in the car, look for numbers that are multiples of 10, such as 20 or 40 m.p.h. signs. Ask your student to find 2-digit numbers, and have them break down the numbers into 10s and 1s. For example, license plate XG 65 LT, the 65 can be broken down into 60 and 5.

## Books to Read

**The Rajah's Rice**  
By David Barry

**The King's Chessboard**  
By David Birch

**Amanda Bean's Amazing Dream**  
By Cindy Neuschwander

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Name \_\_\_\_\_ Date \_\_\_\_\_

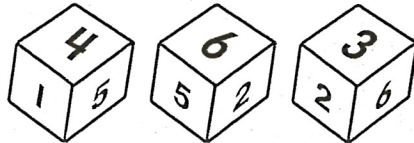
# Game Time

## Product Plus!

### Ready

**You will need:**

3 number cubes  
Paper and pencil



$$\begin{array}{r} 21 \\ \times 7 \\ \hline 147 \\ \\ 63 \\ \times 4 \\ \hline 252 \\ \\ 147 \\ + 252 \\ \hline 399 \end{array}$$

### Set

Clear some space, clear your mind, and get ready to roll!

### Go!

- 1 Roll the cubes.
- 2 Use the cubes to create a 2-digit times 1-digit multiplication problem.
- 3 Have each player record his or her problem and find the product.
- 4 Roll the cubes again.
- 5 Create a problem, and add the product to the product from the first roll.
- 6 Continue to roll and add the products. The winner is the first player whose sum reaches 1,000.

# Using Place Value Patterns

- We can use multiplication patterns to help us multiply by multiples of 10, 100, and 1,000.

What patterns do you notice below?

$$5 \times 1 = 5$$

$$5 \times 10 = 50$$

$$5 \times 100 = 500$$

$$5 \times 1,000 = 5,000$$

$$8 \times 1 = 8$$

$$8 \times 10 = 80$$

$$8 \times 100 = 800$$

$$8 \times 1,000 = 8,000$$

Estimate. Round to the greatest place value. Circle whether the estimate is greater than or less than the actual product.

$$\underline{2},138 \times 9 = \underline{\hspace{2cm}}$$

$$\underline{2},\underline{000} \times \underline{9} = 18,000$$

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# Distributive Property

$$3 \times 32 = (3 \times 30) + (3 \times 2)$$

$\begin{array}{r} 30 \\ + 2 \\ \hline \end{array}$        $90 + 6 = 96$

$$28 \times 5 = (5 \times 20) + (5 \times 8)$$

$\begin{array}{r} 20 \\ + 8 \\ \hline \end{array}$        $100 + 40 = 140$

$$4 \times 79 = (4 \times 70) + (4 \times 9)$$

$\begin{array}{r} 70 \\ + 9 \\ \hline \end{array}$        $280 + 36 = 316$



$$8 \times 59 = (8 \times 50) + (8 \times 9)$$

$\begin{array}{r} 50 \\ + 9 \\ \hline \end{array}$        $400 + 72 = 472$

# Area Model

$$50 + 3$$

6

<p>6 groups of 50</p>  <p><math>6 \times 50 = 300</math></p>	<p>6 groups of 3</p>  <p><math>6 \times 3 = 18</math></p>
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$$\begin{array}{r} 300 \\ + 18 \\ \hline 318 \end{array}$$

*Change the World*  
**ONE LESSON AT A TIME**



Partial Products	Area Model
$  \begin{array}{r}  324 \\  \times 6 \\  \hline  120 \\  1200 \\  \hline  1944  \end{array}  $	$  \begin{array}{r}  300 + 20 + 4 \\  \times 6 \\  \hline  1800 + 120 + 24 = 1944  \end{array}  $

# How to do these products...

$$\begin{array}{r} 23 \\ \times 6 \\ \hline \end{array}$$

$$3 \times 6 = 18$$

put down the 8  
and carry the 1

$$\begin{array}{r} \overset{1}{2}3 \\ \times 6 \\ \hline 8 \end{array}$$

$$2 \times 6 = 12$$

$$12 + 1 = 13$$

Write down the  
13

$$\begin{array}{r} 23 \\ \times 6 \\ \hline 138 \end{array}$$

This is your answer

138

Carry → 7  
the 7

29

8  
x8

232

$$8 \times 9 = 72$$

$$8 \times 2 + 7 = 23$$

<b>x</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>1</b>	1	2	3	4	5	6	7	8	9	10	11	12
<b>2</b>	2	4	6	8	10	12	14	16	18	20	22	24
<b>3</b>	3	6	9	12	15	18	21	24	27	30	33	36
<b>4</b>	4	8	12	16	20	24	28	32	36	40	44	48
<b>5</b>	5	10	15	20	25	30	35	40	45	50	55	60
<b>6</b>	6	12	18	24	30	36	42	48	54	60	66	72
<b>7</b>	7	14	21	28	35	42	49	56	63	70	77	84
<b>8</b>	8	16	24	32	40	48	56	64	72	80	88	96
<b>9</b>	9	18	27	36	45	54	63	72	81	90	99	108
<b>10</b>	10	20	30	40	50	60	70	80	90	100	110	120
<b>11</b>	11	22	33	44	55	66	77	88	99	110	121	132
<b>12</b>	12	24	36	48	60	72	84	96	108	120	132	144