

Name \_\_\_\_\_

# Multiply with Regrouping

**I Can** use regrouping to multiply whole numbers.

Florida's B.E.S.T.

- Number Sense & Operations 4.NSO.2.2, 4.NSO.2.5
- Mathematical Thinking & Reasoning MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.6.1, MTR.7.1



## UNLOCK the Problem Real World

By 1914, Henry Ford had streamlined his assembly line to make a <sup>one</sup> Model T Ford car in 93 minutes. How many minutes did it take to make 25 Model Ts?

Use place value and regrouping.

Multiply.  $93 \times 25$  Estimate.  $90 \times 30 = 2,700$

THINK

RECORD

## STEP 1

- Think of 93 as 9 tens and 3 ones.
- Multiply 25 by 3 ones.

$$\begin{array}{r} 1 \\ 25 \\ \times 93 \\ \hline 75 \end{array} \leftarrow 3 \times 25$$

## STEP 2

- Multiply 25 by 9 tens.

$$\begin{array}{r} 4 \\ 1 \\ 25 \\ \times 93 \\ \hline 75 \\ 2250 \end{array} \leftarrow 90 \times 25$$

## STEP 3

- Add the partial products.

$$\begin{array}{r} 4 \\ 1 \\ 25 \\ \times 93 \\ \hline 75 \\ +2,250 \\ \hline \end{array}$$

So,  $93 \times 25$  is 2,325. Since 2,325 is close to the estimate of 2,700, the answer is reasonable.



▲ The first production Model T Ford was assembled on October 1, 1908.

**Math Talk**

**MTR 4.1** Engage in discussions on mathematical thinking.

Why do you get the same answer whether you multiply  $93 \times 25$  or  $25 \times 93$ ?



$$\text{Total} = 93 + 93 + 93 \text{ - - - - -}$$

$$\text{Total} = 93 \times 25$$

$$\begin{array}{r}
 \phantom{0}93 \\
 \times 25 \\
 \hline
 465 \quad \leftarrow 93 \times 5 \\
 + 1860 \quad \leftarrow 93 \times 20 \\
 \hline
 2325
 \end{array}$$

Name \_\_\_\_\_

Estimate. Then find the product.

2. Estimate:  $70 \times 50 = 3,500$  ✓ 3. Estimate:  $60 \times 50 = 3,000$  ✓ 4. Estimate:  $200 \times 30 = 6,000$

$$\begin{array}{r} 68 \\ \times 53 \\ \hline \end{array}$$

$$\begin{array}{r} 61 \\ \times 54 \\ \hline \end{array}$$

$$\begin{array}{r} 190 \\ \times 27 \\ \hline \end{array}$$

## On Your Own

Estimate. Then find the product.

5. Estimate: \_\_\_\_\_

$$\begin{array}{r} 30 \\ \times 47 \\ \hline \end{array}$$

6. Estimate:  $300 \times 60 = 18,000$

$$\begin{array}{r} 278 \\ \times 56 \\ \hline \end{array}$$

7. Estimate: \_\_\_\_\_

$$\begin{array}{r} 27 \\ \times 25 \\ \hline \end{array}$$

8.  $34 \times 65$

9.  $142 \times \$13$

10.  $60 \times 17$

11.  $462 \times 45$

12.  $57 \times \$98$

Math  
Talk

**MTR**  
**3.1** Complete tasks with mathematical fluency.

Why can you omit zeros of the first partial product when you multiply  $20 \times 34$ ?

**MTR** Write a rule for the pattern. Use your rule to find the unknown numbers.

13.

Hours	<i>h</i>	5	10	15	20	25
Minutes	<i>m</i>	300	600	900		

Rule: \_\_\_\_\_

14. Owners of a summer camp are buying new cots for their cabins. There are 16 cabins. Each cabin needs 6 cots. Each cot costs \$92. How much will the new cots cost?
- \_\_\_\_\_

15. A theater has 28 rows of 38 seats downstairs and 14 rows of 26 seats upstairs. How many seats does the theater have?
- \_\_\_\_\_

$$\begin{array}{r} 4 \\ \hline 2 \end{array}$$

②

$$\begin{array}{r} 68 \\ \times 53 \\ \hline 204 \leftarrow 68 \times 3 \\ + 3400 \leftarrow 68 \times 50 \\ \hline 3604 \end{array}$$

③

$$\begin{array}{r} 61 \\ \times 54 \\ \hline 244 \leftarrow 61 \times 4 \\ + 3050 \leftarrow 61 \times 50 \\ \hline 3294 \end{array}$$

④

$$\begin{array}{r} 190 \\ \times 27 \\ \hline 1330 \leftarrow 190 \times 7 \\ + 3800 \leftarrow 190 \times 20 \\ \hline 5130 \end{array}$$

6)

$$\begin{array}{r} 278 \\ \times 56 \\ \hline 1598 \leftarrow 278 \times 6 \\ + 13900 \leftarrow 278 \times 50 \\ \hline 15498 \end{array}$$