

# Lesson 8: Workshop: Multiplication Strategies

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

Try This Strategy	Another Strategy	Estimation Strategy						
<p>★1. Rectangle Model 8 × 798</p> <table border="1"> <tr> <td>700</td> <td>90</td> <td>8</td> </tr> <tr> <td>8</td> <td></td> <td></td> </tr> </table>	700	90	8	8				
700	90	8						
8								
<p>★2. All-Partials 509 × 7 3500</p> <table border="1"> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>								
<p>★3. Expanded Form 22 = 20 + 2 × 14 = 10 + 4 200</p> <table border="1"> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>								

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Try This Strategy	Another Strategy	Estimation Strategy
<p>★4. Mental Math 71 × 60</p>		
<p>★5. Compact Method 35 × 54</p>		
<p>★6. Expanded Form 17 × 98</p>		

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### Practice Multiplication Strategies (SAB pp. 190–193)

#### Questions 1–10

1.

700	90	8
8	5600	720
		64

$$5600 + 720 + 64 = 6384$$

$$\begin{array}{r} 798 \\ \times 8 \\ \hline 5600 \\ 720 \\ 64 \\ \hline 6384 \end{array}$$

$$\begin{array}{r} 798 \\ \times 8 \\ \hline 800 \\ 6400 \end{array}$$

2.

$$\begin{array}{r} 509 \\ \times 7 \\ \hline 63 \\ 3500 \\ \hline 3563 \end{array}$$

$$(500 \times 7) + (9 \times 7) = 3500 + 63 = 3563$$

$$\begin{array}{r} 509 \\ \times 7 \\ \hline 3500 \\ 63 \\ \hline 3563 \end{array}$$

3.

$$\begin{array}{r} 22 \\ \times 14 \\ \hline 200 \\ 80 \\ 20 \\ \hline 308 \end{array}$$

$$(22 \times 10) + (22 \times 4) = 220 + 88 = 308$$

$$\begin{array}{r} 22 \\ \times 14 \\ \hline 22 \times 15 \\ 220 + 110 = 330 \end{array}$$

4.

$$\begin{array}{r} 70 \times 60 = 4200 \\ 1 \times 60 = 60 \\ 4200 + 60 = 4260 \end{array}$$

$$\begin{array}{r} 71 \\ \times 60 \\ \hline 00 \\ 4260 \\ \hline 4260 \end{array}$$

$$\begin{array}{r} 71 \\ \times 60 \\ \hline 70 \\ 4200 \end{array}$$

5.

	50	4	
30	30 × 50 = 1500	30 × 4 = 120	
5	5 × 50 = 250	5 × 4 = 20	

$$1500 + 120 + 250 + 20 = 1890$$

$$\begin{array}{r} 35 \\ \times 54 \\ \hline 140 \\ 1750 \\ \hline 1890 \end{array}$$

$$\begin{array}{r} 35 \\ \times 54 \\ \hline 40 \\ 2000 \end{array}$$

6.

$$\begin{array}{r} 17 \\ \times 98 \\ \hline 56 \\ 80 \\ 630 \\ 900 \\ \hline 1666 \end{array}$$

$$(100 \times 17) - (2 \times 17) = 1700 - 34 = 1666$$

$$\begin{array}{r} 17 \\ \times 98 \\ \hline 1700 \\ 1700 \end{array}$$

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7.

$$\begin{array}{r} 202 \\ \times 51 \\ \hline 10,100 \\ 20,200 \\ \hline 10,302 \end{array}$$

$$\begin{array}{r} 202 \times 51 \\ \swarrow \quad \searrow \\ 202 \quad 202 \\ \times 50 \quad \times 1 \\ \hline 10,100 \quad + \quad 202 \\ \hline 10,302 \end{array}$$

$$\begin{array}{r} 202 \\ \times 51 \rightarrow 200 \\ \times 50 \\ \hline 10,000 \end{array}$$

8.

	500	70	7	
40	$40 \times 500 =$ 20,000	$40 \times 70 =$ 2800	$40 \times 7 =$ 280	$\begin{array}{r} 32 \\ 22 \\ 577 \\ \times 43 \\ \hline 1731 \\ 23,080 \\ \hline 24,811 \end{array}$
3	$3 \times 500 =$ 1500	$3 \times 70 =$ 210	$3 \times 7 =$ 21	

$$2000 + 2800 + 280 + 1500 + 210 + 21 = 24,811$$

$$\begin{array}{r} 577 \rightarrow 600 \\ \times 43 \quad \times 40 \\ \hline 24,000 \end{array}$$

9.

$$\begin{array}{r} 863 \\ \times 45 \\ \hline 15 \\ 300 \\ 4000 \\ 120 \\ 2400 \\ 32000 \\ \hline 38,835 \end{array}$$

$$\begin{array}{r} 863 \\ \times 45 \\ \hline 4315 \\ 34,520 \\ \hline 38,835 \end{array}$$

$$\begin{array}{r} 863 \rightarrow 900 \\ \times 45 \quad \times 40 \\ \hline 36,000 \end{array}$$

10. A.\* Possible response:  $70 \times 30 = 2100$

B.\*

	60	7
30	1800	210
5	300	35

$$\begin{array}{r} 67 \\ \times 35 \\ \hline 1800 \\ 210 \\ 300 \\ 35 \\ \hline 2345 \end{array}$$

C.\*

$$\begin{array}{r} 67 = 60 + 7 \\ \times 35 = 35 + 5 \\ \hline 35 \\ 300 \\ 210 \\ 1800 \\ \hline 2345 \end{array}$$

$$\begin{array}{r} 67 \\ \times 35 \\ \hline 335 \\ 2010 \\ \hline 2345 \end{array}$$

D.\* My estimate is close to my answer so I know it's reasonable.

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

Try This Strategy	Another Strategy	Estimation Strategy
<p>■ 7. Compact Method</p> $\begin{array}{r} 202 \\ \times 51 \\ \hline \end{array}$		
<p>■ 8. Rectangle Model</p> $577 \times 43$		
<p>■ 9. All-Partials</p> $\begin{array}{r} 863 \\ \times 45 \\ \hline \end{array}$		

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✓ Check-In: Question 10

★ 10. The problem is  $67 \times 35$ .

A. Estimate the product.

B. Tanya started to solve the problem using all-partials. Jerome started to solve the problem using a rectangle model. Finish their work. Show each of Tanya's partial products in Jerome's rectangle.

Tanya's Work:

$$\begin{array}{r} 67 \\ \times 35 \\ \hline 1800 \\ \phantom{1800} \\ \phantom{1800} \\ \phantom{1800} \\ \phantom{1800} \\ \hline \end{array}$$

Jerome's Work:

		35

C. Show how to use expanded form or the compact method to solve  $67 \times 35$ .

D. Use your estimate in Question A to explain if your answer in Question C is reasonable.

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\*Answers and/or discussion are included in the lesson.