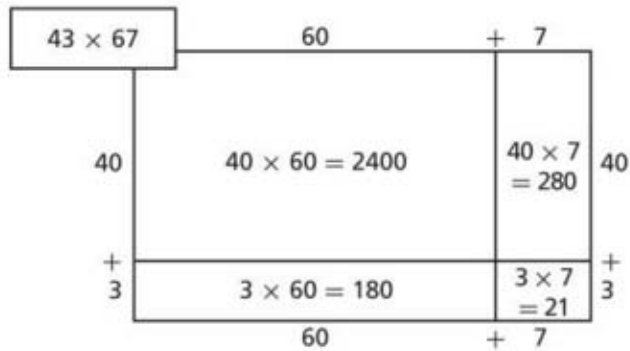


## Multiplication Guide

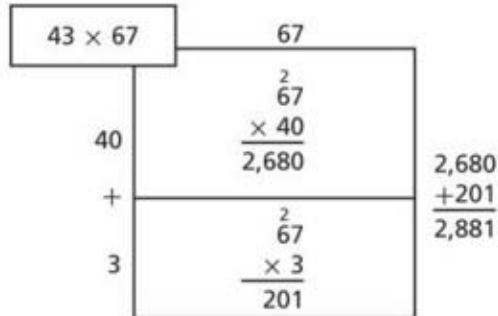
### Place Value Sections



### Expanded Notation

$$\begin{array}{r}
 67 = 60 + 7 \\
 43 = 40 + 3 \\
 \hline
 40 \times 60 = 2,400 \\
 40 \times 7 = 280 \\
 3 \times 60 = 180 \\
 3 \times 7 = 21 \\
 \hline
 2,881
 \end{array}$$

### Place Value Rows



### Short Cut

New Groups Above      New Groups Below

$$\begin{array}{r}
 \overset{2}{6}7 \\
 \times 43 \\
 \hline
 201 \\
 2,680 \\
 \hline
 2,881
 \end{array}
 \qquad
 \begin{array}{r}
 67 \\
 \times 43 \\
 \hline
 \overset{1}{2}81 \\
 \overset{2}{2}480 \\
 \hline
 2,881
 \end{array}$$

Here,  $43 \times 67$  is solved with a method we call the **Short Cut**.

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
$  \begin{array}{r}  \overset{2}{6}7 \\  \times 43 \\  \hline  1  \end{array}  $	$  \begin{array}{r}  \overset{2}{6}7 \\  \times 43 \\  \hline  201  \end{array}  $	$  \begin{array}{r}  \overset{2}{6}7 \\  \times 43 \\  \hline  201 \\  0  \end{array}  $	$  \begin{array}{r}  \overset{2}{6}7 \\  \times 43 \\  \hline  201 \\  80  \end{array}  $	$  \begin{array}{r}  \overset{2}{6}7 \\  \times 43 \\  \hline  201 \\  2,680  \end{array}  $	$  \begin{array}{r}  \overset{2}{6}7 \\  \times 43 \\  \hline  201 \\  2,680 \\  \hline  2,881  \end{array}  $

Here,  $43 \times 67$  is solved with a method we call **New Groups Below**.

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
$  \begin{array}{r}  67 \\  \times 43 \\  \hline  \phantom{0}  \end{array}  $	$  \begin{array}{r}  67 \\  \times 43 \\  \hline  \overset{1}{2}81  \end{array}  $	$  \begin{array}{r}  67 \\  \times 43 \\  \hline  \overset{1}{2}81 \\  0  \end{array}  $	$  \begin{array}{r}  67 \\  \times 43 \\  \hline  \overset{1}{2}81 \\  \overset{2}{2}80  \end{array}  $	$  \begin{array}{r}  67 \\  \times 43 \\  \hline  \overset{1}{2}81 \\  \overset{2}{2}480  \end{array}  $	$  \begin{array}{r}  67 \\  \times 43 \\  \hline  \overset{1}{2}81 \\  \overset{2}{2}480 \\  \hline  2,881  \end{array}  $