G4-M3-Lesson 7
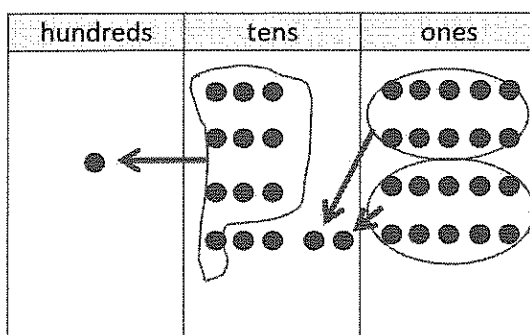
1. Represent the following expression with disks, regrouping as necessary. To the right, record the partial products vertically.

4×35

hundreds	tens	ones

$$
\begin{array}{r}
3\ \ 5 \\
\times \qquad 4 \\
\hline
2\ \ 0 \quad \rightarrow 4 \times 5\ \textit{ones} \\
+\ 1\ \ 2\ \ 0 \quad \rightarrow 4 \times 3\ \textit{tens} \\
\hline
1\ \ 4\ \ 0
\end{array}
$$

> I draw 4 groups of 3 tens 5 ones.
> 4 times 5 ones equals 20 ones.
> I compose 20 ones to make 2 tens.
> 4 times 3 tens equals 12 tens.
> I compose 10 tens to make 1 hundred.

> After multiplying the ones, I record the product. I multiply the tens and record the product. I add these two partial products. My sum is the product of 35×4.

2. Jillian says she found a shortcut for doing multiplication problems. When she multiplies 3×45, she says, "3×5 is 15 ones, or 1 ten and 5 ones. Then, there's just 4 tens left in 45, so add it up, and you get 5 tens and 5 ones." Do you think Jillian's shortcut works? Explain your thinking in words, and justify your response using a model or partial products.

Sample answer:

Jillian multiplied the ones. She found the first partial product. But she didn't multiply the tens. She forgot to multiply 4 tens by 3. So, Jillian didn't get the right second partial product. So, her final product isn't correct. The product of 3×45 is 135.

$$
\begin{array}{r}
4\ \ 5 \\
\times \qquad 3 \\
\hline
1\ \ 5 \quad \rightarrow 3 \times 5\ \textit{ones} \\
+\ 1\ \ 2\ \ 0 \quad \rightarrow 3 \times 4\ \textit{tens} \\
\hline
1\ \ 3\ \ 5
\end{array}
$$