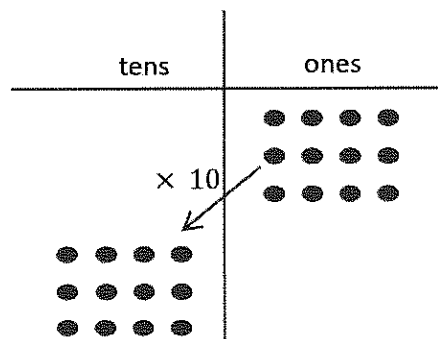


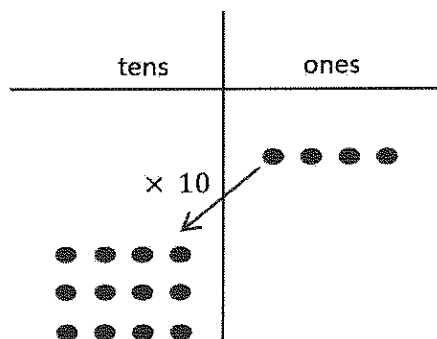
G3-M3-Lesson 20

1. Use the chart to complete the equations. Then solve.



a. $(3 \times 4) \times 10$
 $= (12 \text{ ones}) \times 10$
 $= \underline{120}$

I know that parentheses change the way numbers are grouped for solving. I can see that the parentheses group 3×4 ones, so I'll do that part of the equation first. 3×4 ones = 12 ones. Next I'll multiply the 12 ones by 10. The equation becomes $12 \times 10 = 120$. The chip model shows how I can multiply the 3 groups of 4 ones by 10.



b. $3 \times (4 \times 10)$
 $= 3 \times (4 \text{ tens})$
 $= \underline{120}$

I can see that here the parentheses move over and group the $4 \text{ ones} \times 10$. I'll solve that first to get 40, or 4 tens. Then I can multiply the 4 tens by 3. So the equation becomes $3 \times 40 = 120$. The chip model shows how I multiply 4 ones by 10 first and then multiply the 4 tens by three.

By moving the parentheses over and grouping the numbers differently, this problem becomes friendlier. 3×40 is a little easier than multiplying 12×10 . This new strategy will help me find larger unknown facts later on.

2. John solves 30×3 by thinking about 10×9 . Explain his strategy.

$$\begin{aligned} 30 \times 3 &= (10 \times 3) \times 3 \\ &= 10 \times (3 \times 3) \\ &= 10 \times 9 \\ &= 90 \end{aligned}$$

John writes 30×3 as $(10 \times 3) \times 3$. Then he moves the parentheses over to group 3×3 . Solving 3×3 first makes the problem easier. Instead of 30×3 , John can solve by thinking of an easier fact, 10×9 .

Although it is easy to solve for 30×3 , John moves the parentheses over and groups the numbers differently to make the problem a little friendlier for him. It's just another way to think about the problem.