Materials List

(S/T) Place Value Chart

(S) Personal white board

Eureka Math

3rd Grade
Module 3
Lesson 20

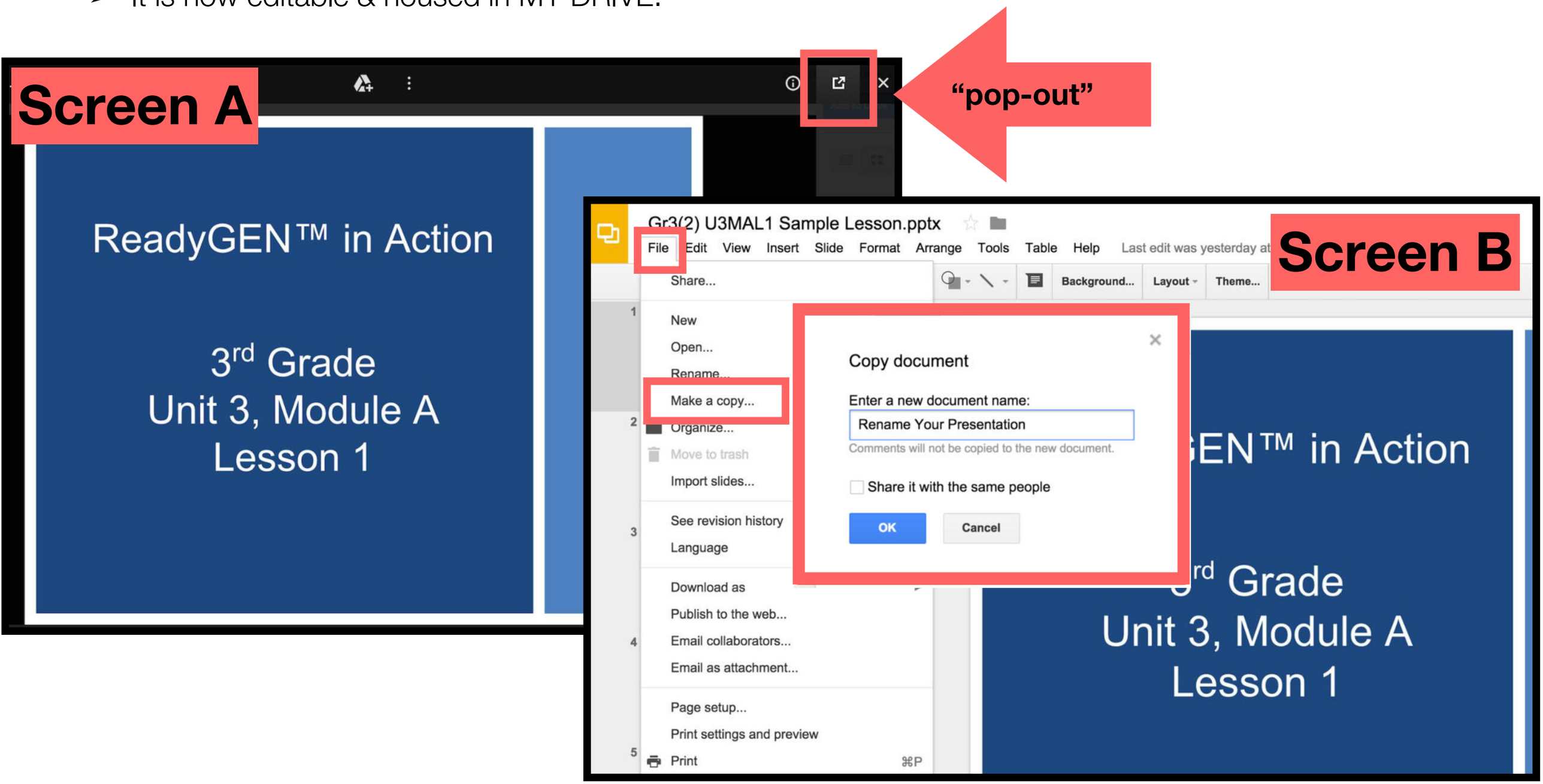
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this project!

Directions for customizing presentations are available on the next slide.

Customize this Slideshow

Reflecting your Teaching Style and Learning Needs of Your Students

- ➢ When the Google Slides presentation is opened, it will look like Screen A.
- ➢ Click on the “pop-out” button in the upper right hand corner to change the view.
- ➢ The view now looks like Screen B.
- ➢ Within Google Slides (not Chrome), choose FILE.
- ➢ Choose MAKE A COPY and rename your presentation.
- ➢ Google Slides will open your renamed presentation.
- ➢ It is now editable & housed in MY DRIVE.



Icons

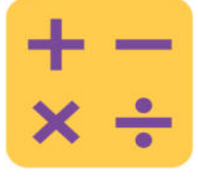
Read, Draw, Write

Learning Target

Personal White Board

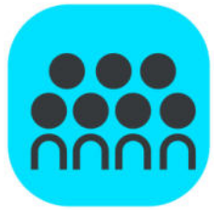
Problem Set

Manipulatives Needed



Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

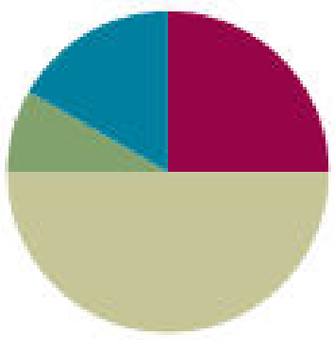
Small Group Time

Lesson 20

Objective: Use place value strategies and the associative property $n \times (m \times 10) = (n \times m) \times 10$ (where n and m are less than 10) to multiply by multiples of 10.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



I can use place value strategies and the associative property to multiply by multiples of 10.

Group Counting

- Sixes to 60
- Sevens to 70
- Eights to 80
- Nines to 90

Multiply by Different Units

$$2 \times 5$$

Say the multiplication equation in unit form

Example: *2 × 5* ____ = ____ *ones.*

Say it in standard form: _____ x _____ = _____

Now try: 2 × 6 tens = ___tens

On your personal white board, write the multiplication equation.

Multiply by Different Units

$7 \times 6 =$ _____

Say the multiplication equation in unit form **7 x 6 = 42**

$70 \times 6 =$ **70 x 6 = 420**

Write in the Parenthesis

4 × 5 = 2 × 2 × 5

What is 4 x 5? **20**

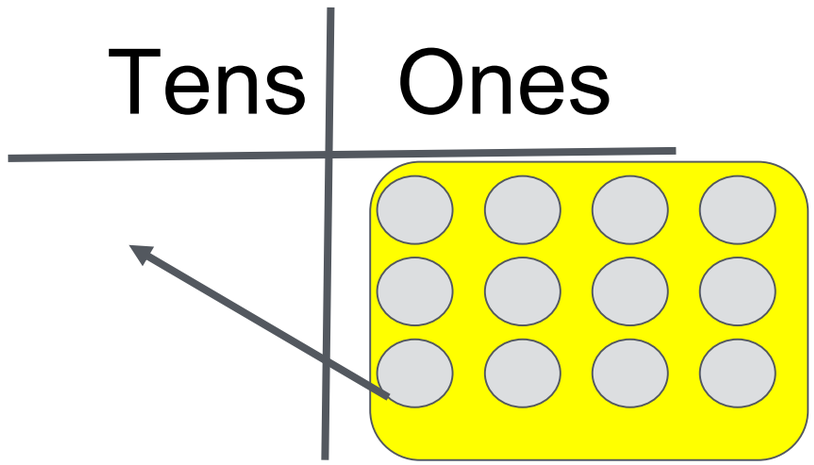
If the left side of the equation is 20, then the right side must also equal 20. Where do we need to put in the parenthesis to make the right side equal 20? Is there more than one way?

20 = (2 × 2) × 5

20 = 2 × (2× 5)

Application Problem

These will move to the tens column to show 3 rows of 4 tens.



How can this array showing 3 x 4 help us find 3 x 40?

3 rows of 4 tens (40) = 120.

Concept Development

40 x 2

Ten *times what number gives us the product of 40?* **4**

Let's rewrite our expression: (10 x 4) x 2

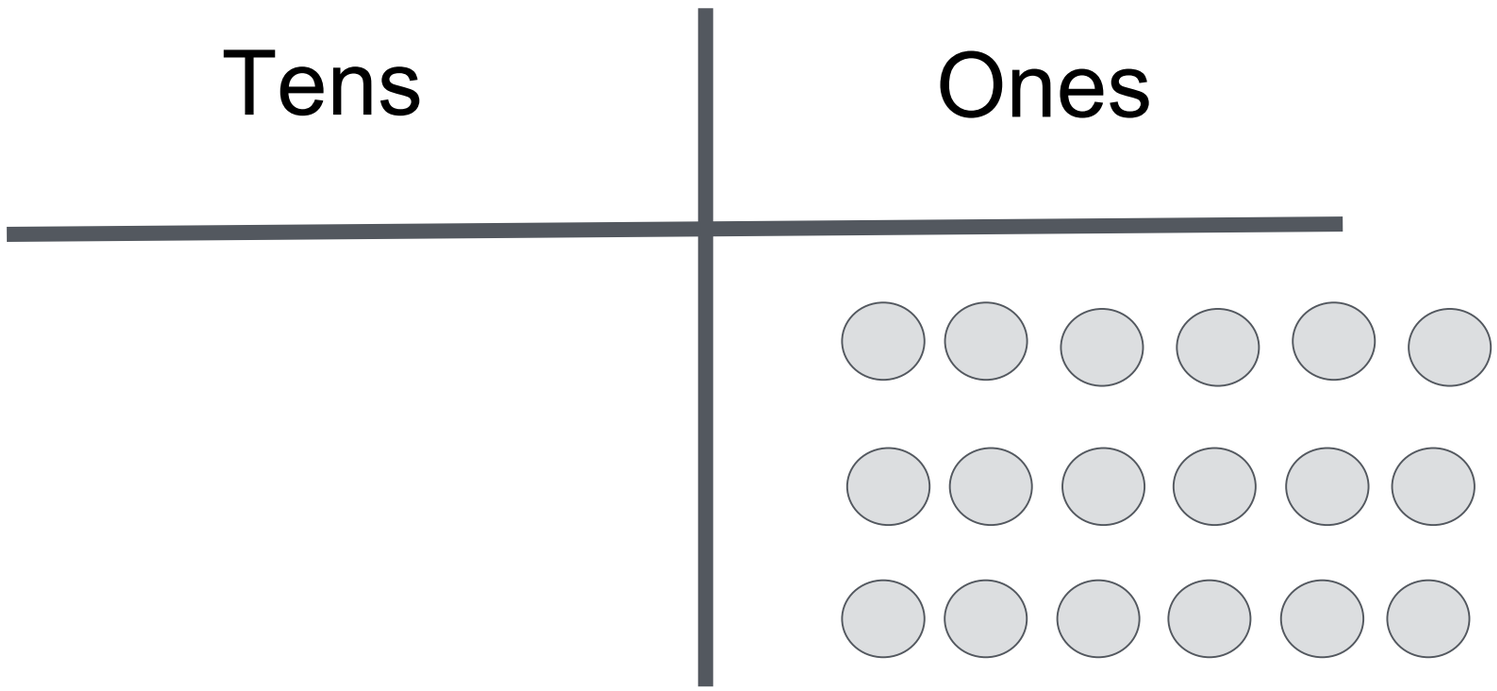
Why do you think I put 10 x 4 in parenthesis?

Let's move the parenthesis to change the way the numbers are grouped. On your whiteboard, move them to group the numbers differently.

10 x (4 x 2)

Is this problem easier than 40 x 2?

Concept Development



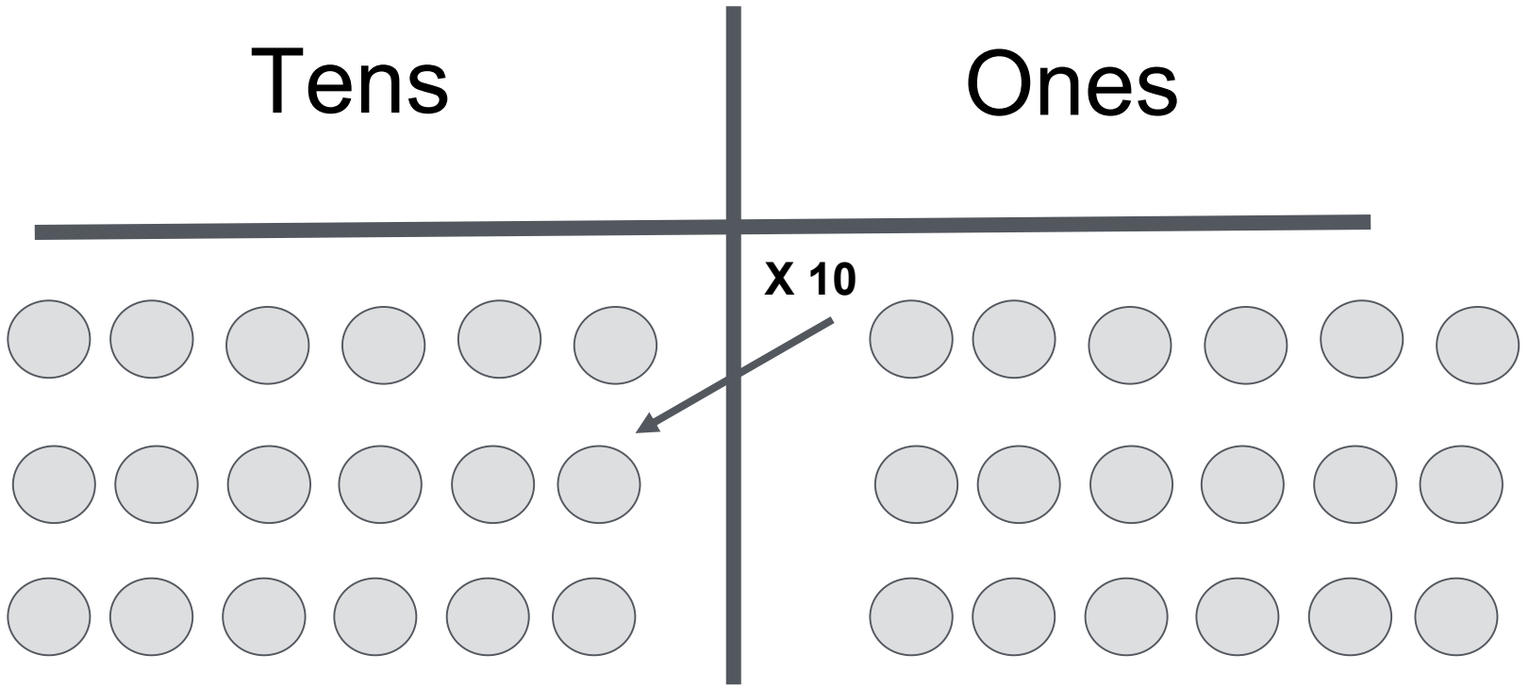
Use the chart to write an equation in unit form.

(Answer on click)

3 x 6 ones = 18 ones

Concept Development

Now I want to multiply 18 ones by 10. Watch as I move the 18 dots from the ones to the tens column.



Let's multiply our 3 groups of 6 ones by 10.

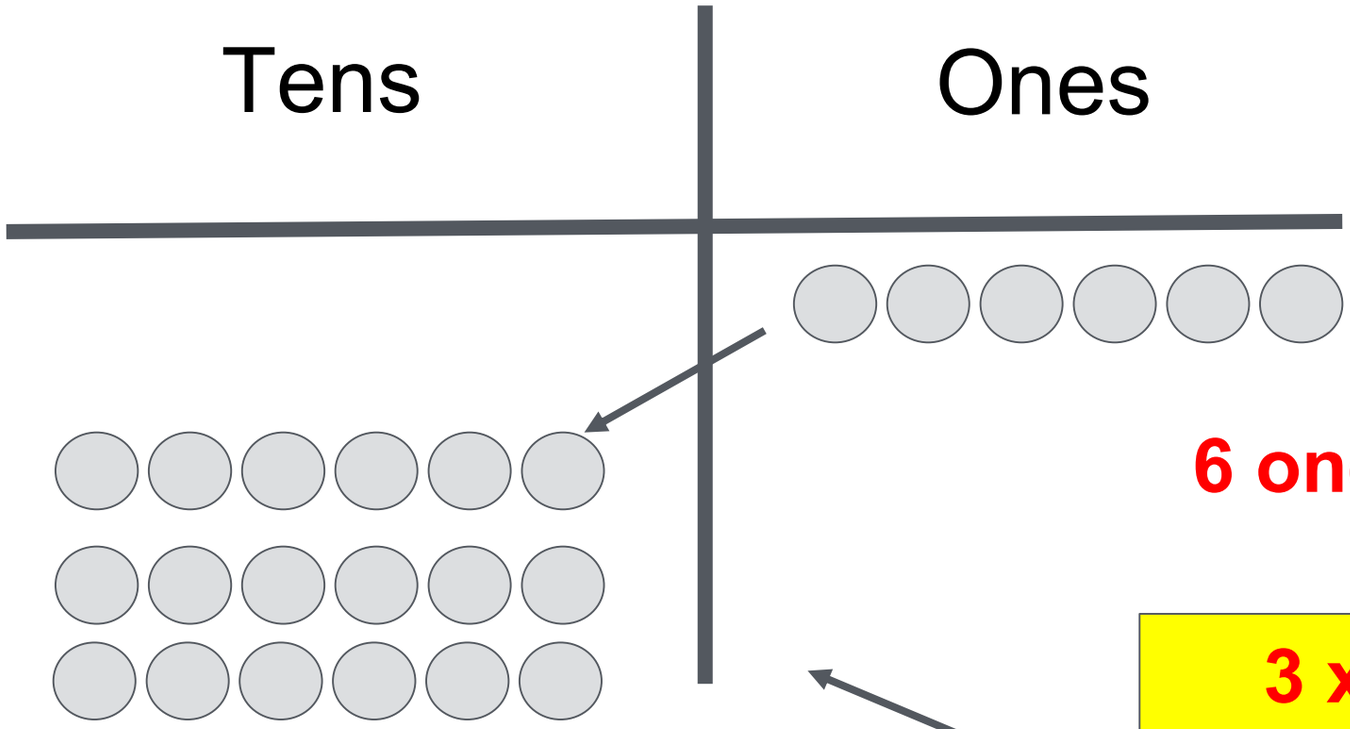
(3 x 6 ones) x 10= _____

18 ones x 10 in unit form? **18 tens**

18 tens is 180

Concept Development

This time, I already moved 6 ones to make them 6 tens.
Use the chart to write a multiplication equation in unit form.



6 ones × 10 = 6 tens

3 x (6 x 10)
How does my array show this expression?

Now, I want to multiply 6 tens by 3.
How many rows do I need to add to show 3 rows of 6 tens? 2 rows

180

What is the value of 3 x 6 tens or 18 tens?

Concept Development

Compare the expressions (3 × 6 ones) × 10 and 3 × (6 × 10).

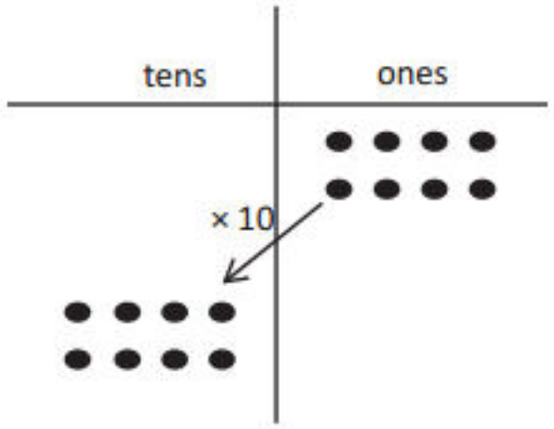
What do you notice about the factors we used?

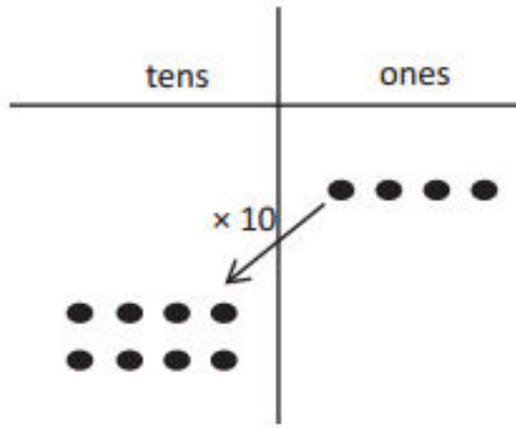
The factors are the same. 3, 6, and 10 were used in both, but were in different orders.

Problem Set

Name _____ Date _____

1. Use the chart to complete the equations. Then, solve. The first one has been done for you.





a. (2 × 4) × 10

= (8 ones) × 10

= **80**

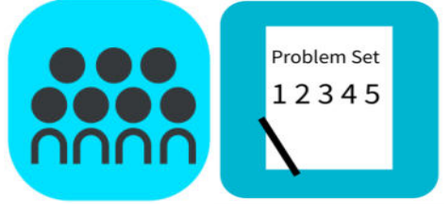
= _____

b. 2 × (4 × 10)

= 2 × (4 tens)

= _____

Student Debrief



- In Problem 1, which grouping is easier for you to solve? Why?
- How do you see the movement of the parentheses in the place value charts in Problem 1?
- Share with a partner how you knew where to draw parentheses for the equations in Problem 2.
- In Problem 3, how did Gabriella simplify the problem?
- Why didn't we need to have a hundreds column in our place value charts?
- How is this new strategy helpful for finding unknown, larger facts?

Exit Ticket

Name _____ Date _____

1. Place parentheses in the equations to find the related fact. Then, solve.

a. $4 \times 20 = 4 \times 2 \times 10$

$= 4 \times 2 \times 10$

$= \_\_\_\_\_ \times 10$

$= \_\_\_\_\_$

b. $3 \times 30 = 3 \times 3 \times 10$

$= 3 \times 3 \times 10$

$= \_\_\_\_\_ \times 10$

$= \_\_\_\_\_$

2. Jamila solves 20×5 by thinking about 10 tens. Explain her strategy.