Eureka Math

3rd Grade
Module 1
Lesson 15

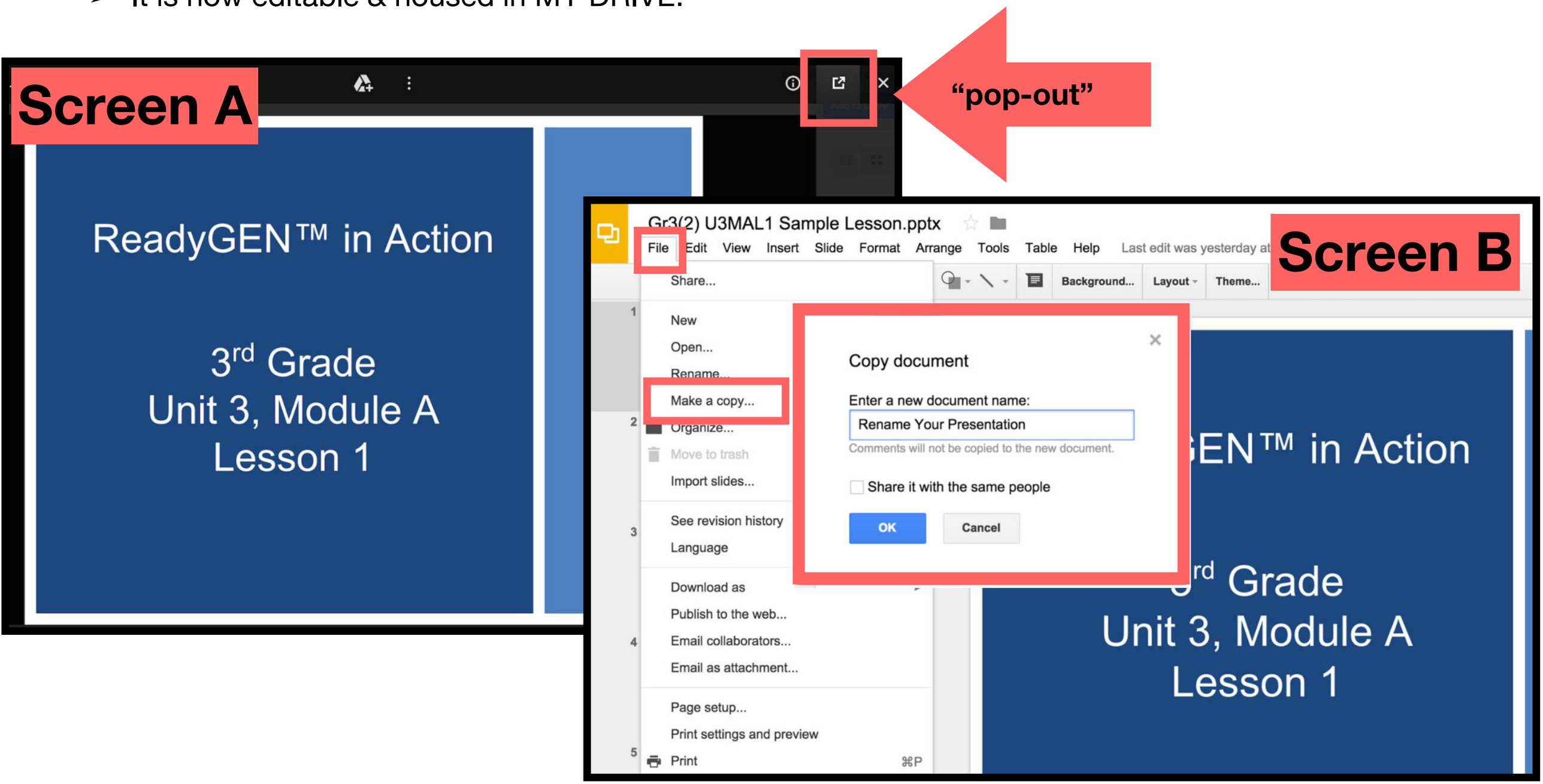
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

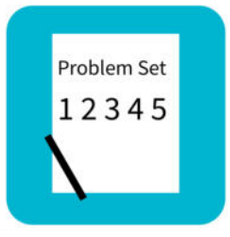


Icons

Read, Draw, Write

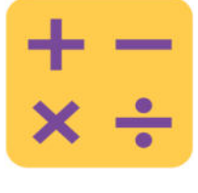
Learning Target

Personal White Board



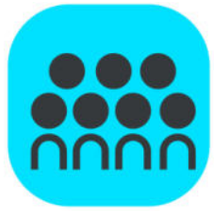
Problem Set

Manipulatives Needed



Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

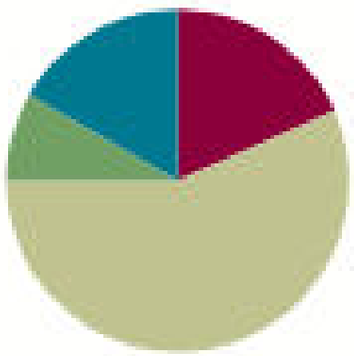
Small Group Time

Lesson 15

Objective: Relate arrays to tape diagrams to model the commutative property of multiplication.

Suggested Lesson Structure

Fluency Practice	(11 minutes)
Application Problem	(5 minutes)
Concept Development	(34 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

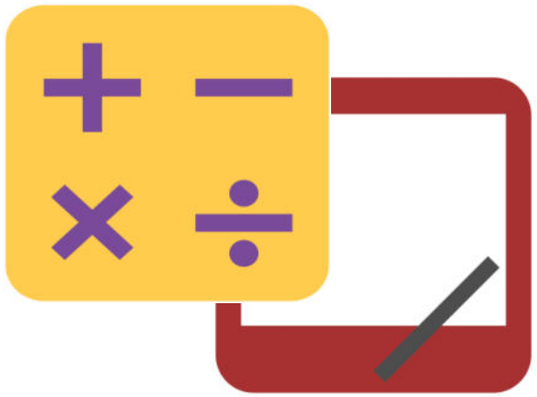


I can relate arrays to tape diagrams to model the commutative property of multiplication.

Pattern Sheet: Multiply by 4

Multiply.

4 x 1 = _____	4 x 2 = _____	4 x 3 = _____	4 x 4 = _____
4 x 5 = _____	4 x 1 = _____	4 x 2 = _____	4 x 1 = _____
4 x 3 = _____	4 x 1 = _____	4 x 4 = _____	4 x 1 = _____
4 x 5 = _____	4 x 1 = _____	4 x 2 = _____	4 x 3 = _____
4 x 2 = _____	4 x 4 = _____	4 x 2 = _____	4 x 5 = _____
4 x 2 = _____	4 x 1 = _____	4 x 2 = _____	4 x 3 = _____
4 x 1 = _____	4 x 3 = _____	4 x 2 = _____	4 x 3 = _____
4 x 4 = _____	4 x 3 = _____	4 x 5 = _____	4 x 3 = _____
4 x 4 = _____	4 x 1 = _____	4 x 4 = _____	4 x 2 = _____
4 x 4 = _____	4 x 3 = _____	4 x 4 = _____	4 x 5 = _____



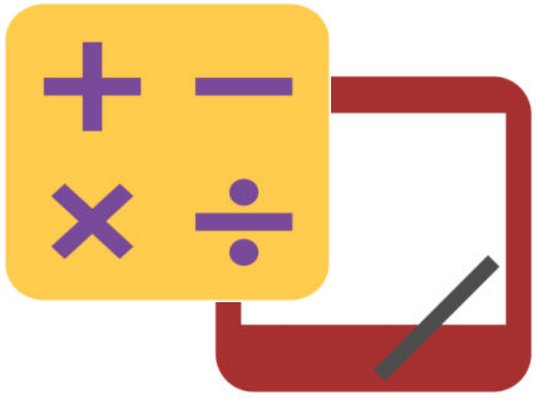
Multiply By 4

5 x 4 =

Let’s skip-count up by fours to find the answer.

4 8 12 16 20

5 x 4 = 20



Multiply By 4

4 x 4 =_____

Let’s skip-count up by fours again.

4 8 12 16

Multiply by 4

Let’s see how we can skip-count down to find the answer to 4 x 4.

Start at 20.

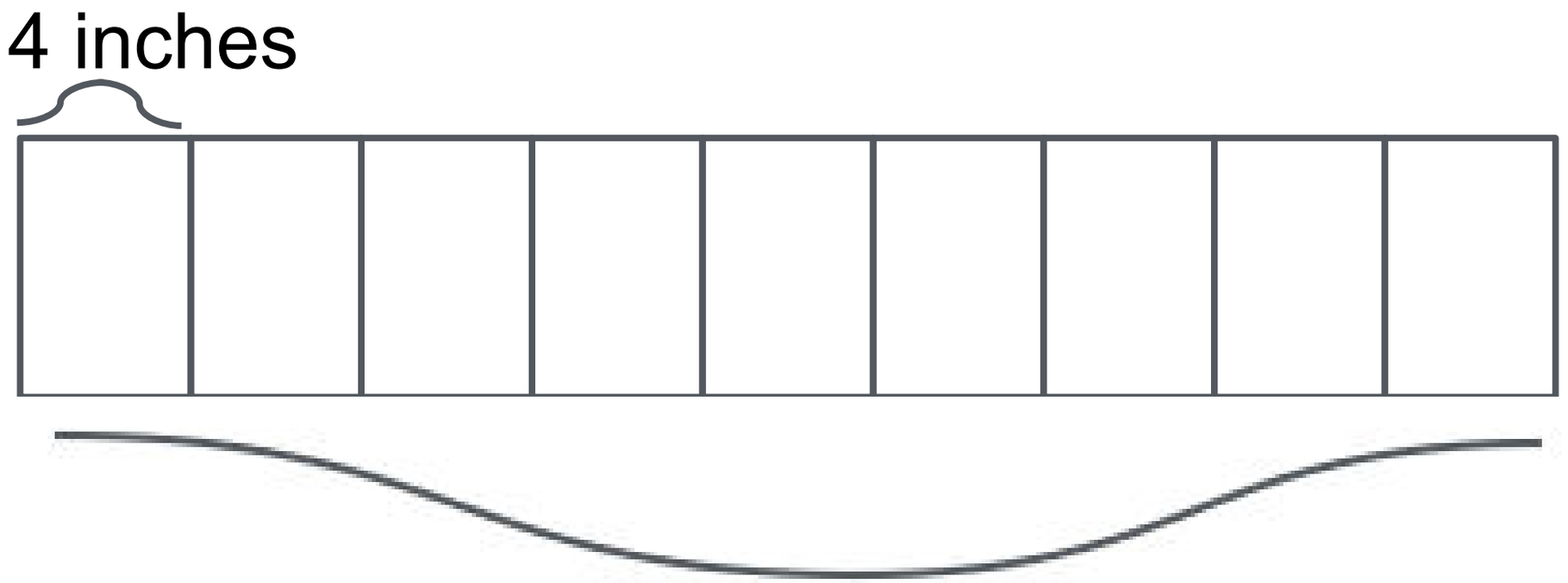
Group Counting

Let’s count by twos

Let’s count by threes

Application Problem

A cell phone is about 4 inches long. About how long are 9 cell phones laid end to end?



9 cell phones
? inches

9 x 4 = 36

9 cell phones are about 36 inches long.

Concept Development

Draw an array with 2 rows and 4 columns above the fold on your paper.

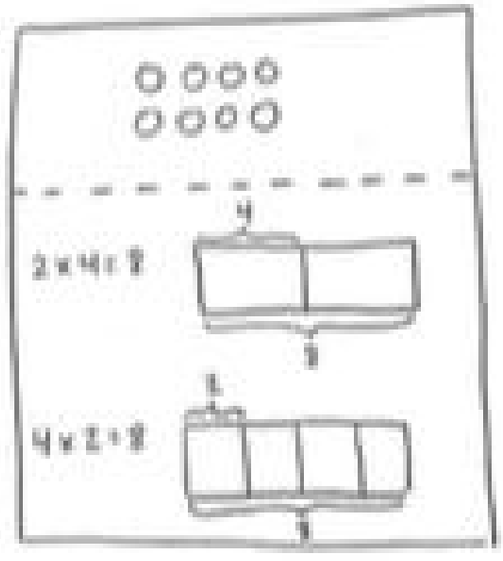
Use the array to remind your partner about what the commutative property is.

Turn your paper if you need to.

Arrays to Tape Diagrams

Use the commutative property to write two multiplication equations for the array.

Write them on the left side of the paper below the fold, one above the other.



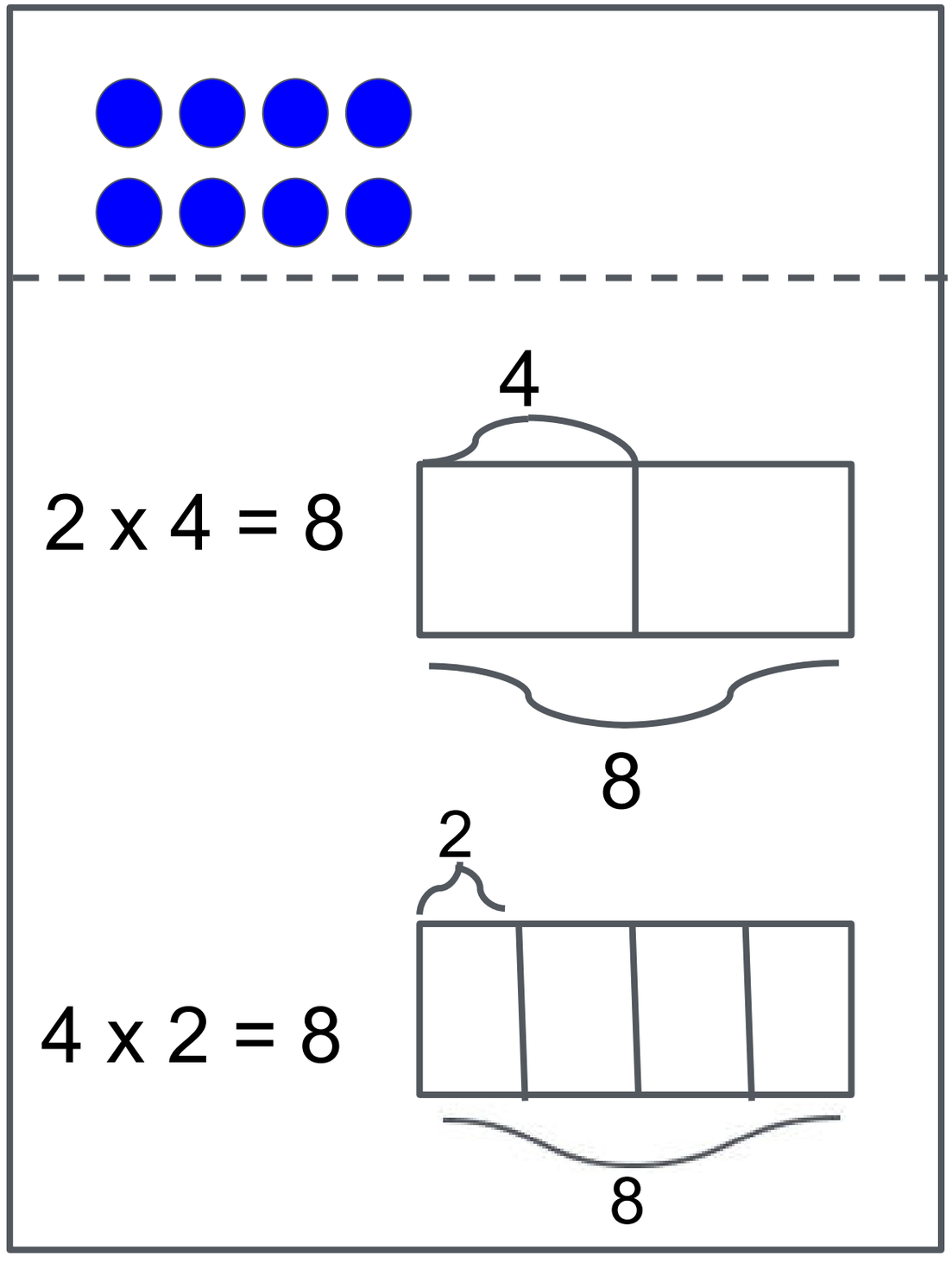
Arrays to Tape Diagrams

Next to each equation, draw and label a tape diagram to match.

Make sure the diagrams are the same size, because they both represent the same total.

Arrays to Tape Diagrams

Explain to a partner how your tape diagram relates to the array.



5 x 4 and 4 x 7

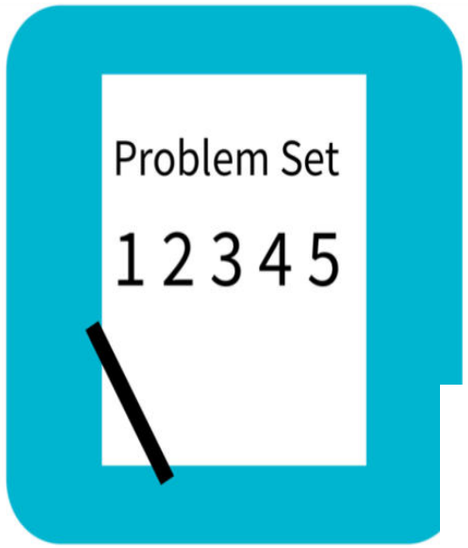
Draw arrays to match the expressions.

Write two equations for each array.

Draw and label tape diagrams to represent the commutativity for each set of facts.

Discussion

Why is it that an array can show two multiplication sentences, but a tape diagram can only show one multiplication sentence?

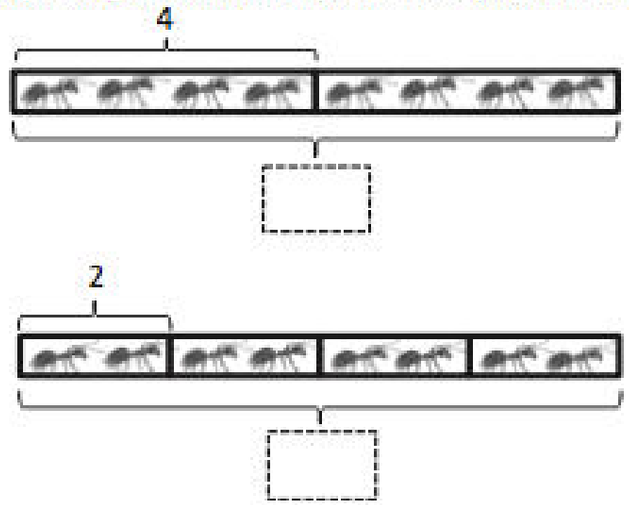


Problem Set

Name _____ Date _____

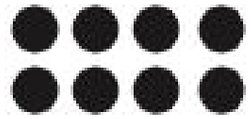
1. Label the tape diagrams and complete the equations. Then, draw an array to represent the problems.

a.

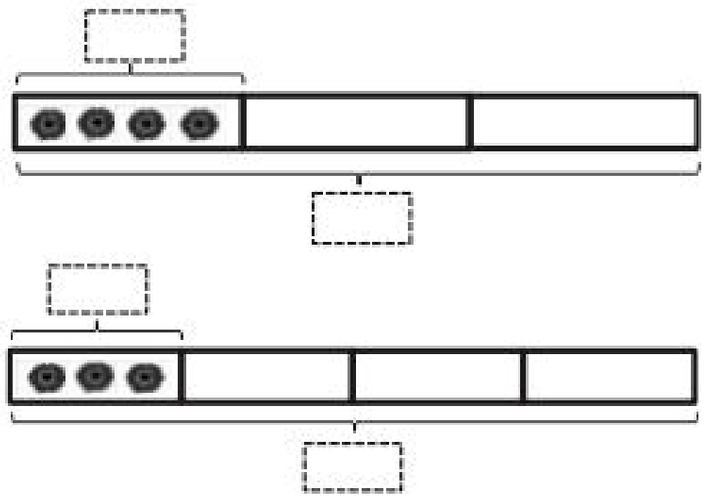


2 × 4 = _____

4 × 2 = _____



b.



_____ × 4 = _____

4 × _____ = _____

Debrief

Lesson Objective: Relate arrays to tape diagrams to model the commutative property of multiplication.

~Compare differences and discuss why both arrays reflect both diagrams.

~Compare Problems 3 and 4. Notice the model of commutativity even with different contexts.

~How do the array and the two tape diagrams show commutativity?

~How does the commutative property help us learn new multiplication facts?

Exit Ticket

Name _____ Date _____

Draw and label 2 tape diagrams to show that 4 × 3 = 3 × 4. Use your diagrams to explain how you know the statement is true.