Eureka Math

3rd Grade
Module 1
Lesson 10

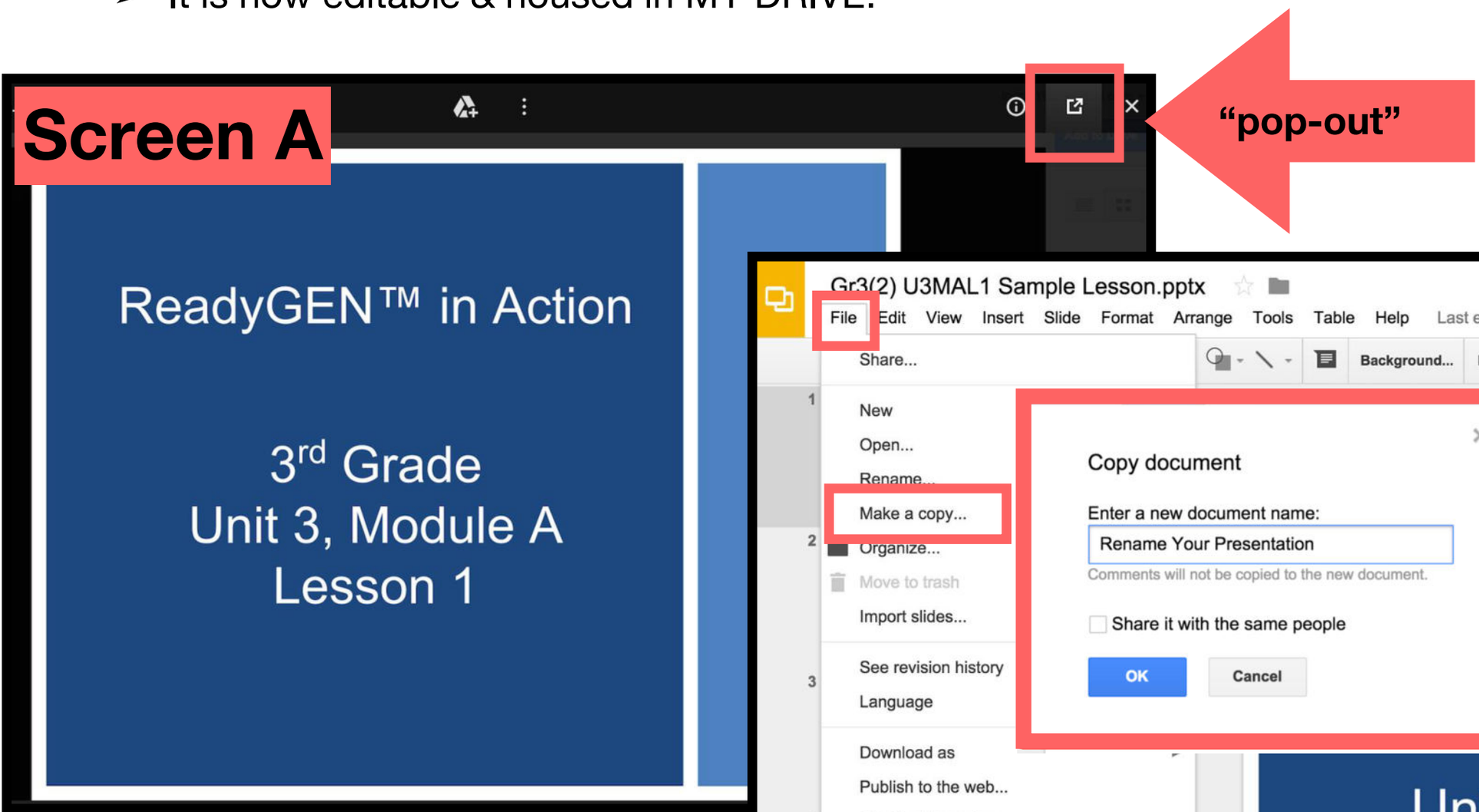
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

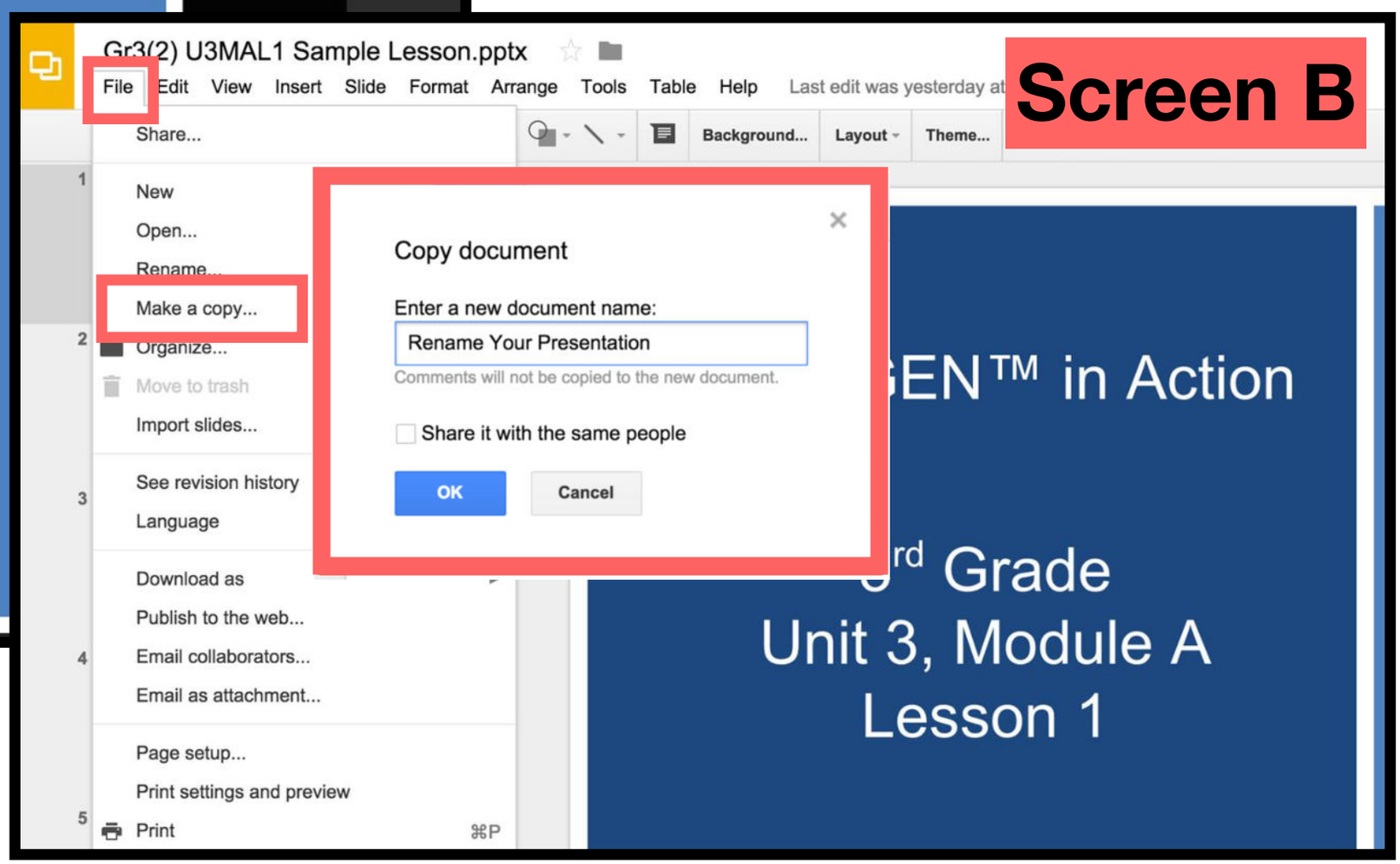
Directions for customizing presentations are available on the next slide.

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.



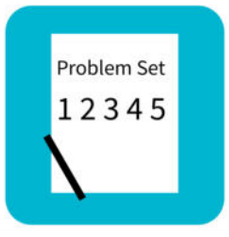


Icons

Read, Draw, Write

Learning Target

Personal White Board

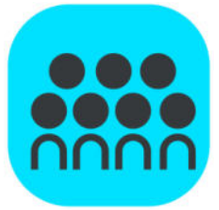


Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

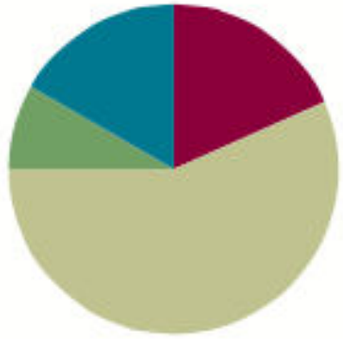
Small Group Time

Lesson 10

Objective: Model the distributive property with arrays to decompose units as a strategy to multiply.

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 model the distributive property with arrays to decompose units as a strategy to multiply.

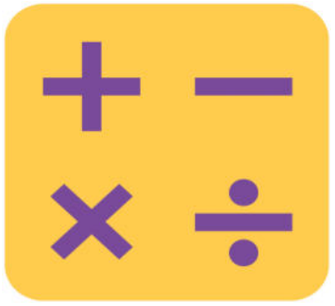
Multiply by 2 Pattern Sheet

7 x 2 = _____. Let's skip count by twos.

This time let's start from 10 to find our answer more quickly. Show 5 fingers all at once to show ten.

Now count by twos from 10. Raise another finger for each two you count.

Let's see how we can skip-count down to find the answer, too. Start at 20.



Multiply by 2 Pattern Sheet

8 x 2 = _____. Let's skip count by twos.

This time let's start from 10 to find our answer more quickly. Show 5 fingers all at once to show ten.

Now count by twos from 10. Raise another finger for each two you count.

Let's see how we can skip-count down to find the answer, too. Start at 20.

Multiply by 2 Pattern Sheet

9 x 2 = _____. Let's skip count by twos.

This time let's start from 10 to find our answer more quickly. Show 5 fingers all at once to show ten.

Now count by twos from 10. Raise another finger for each two you count.

Let's see how we can skip-count down to find the answer, too. Start at 20.

Multiply by 2 Pattern Sheet

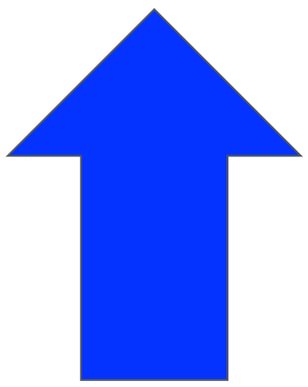
Let's get some practice by multiplying by 2. Be sure to work left to right across the page.

Multiply.

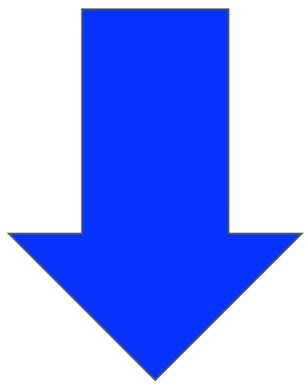
2 x 1 = _____	2 x 2 = _____	2 x 3 = _____	2 x 4 = _____
2 x 5 = _____	2 x 6 = _____	2 x 7 = _____	2 x 8 = _____
2 x 9 = _____	2 x 10 = _____	2 x 5 = _____	2 x 6 = _____
2 x 5 = _____	2 x 7 = _____	2 x 5 = _____	2 x 8 = _____
2 x 5 = _____	2 x 9 = _____	2 x 5 = _____	2 x 10 = _____

Group Counting

Let’s count by **threes**.



Count Up



Count Down

Group Counting

Let’s count by **fours**.

Count Up

Count Down

Application Problem

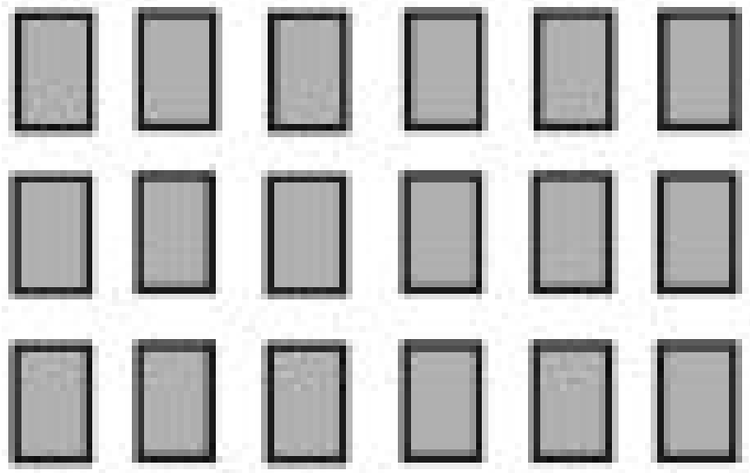
A guitar has 6 strings. How many strings are there on 3 guitars? Write a multiplication sentence to solve.

Distributive Property with Arrays

On your personal white board, draw an array to represent the total number of guitar strings.

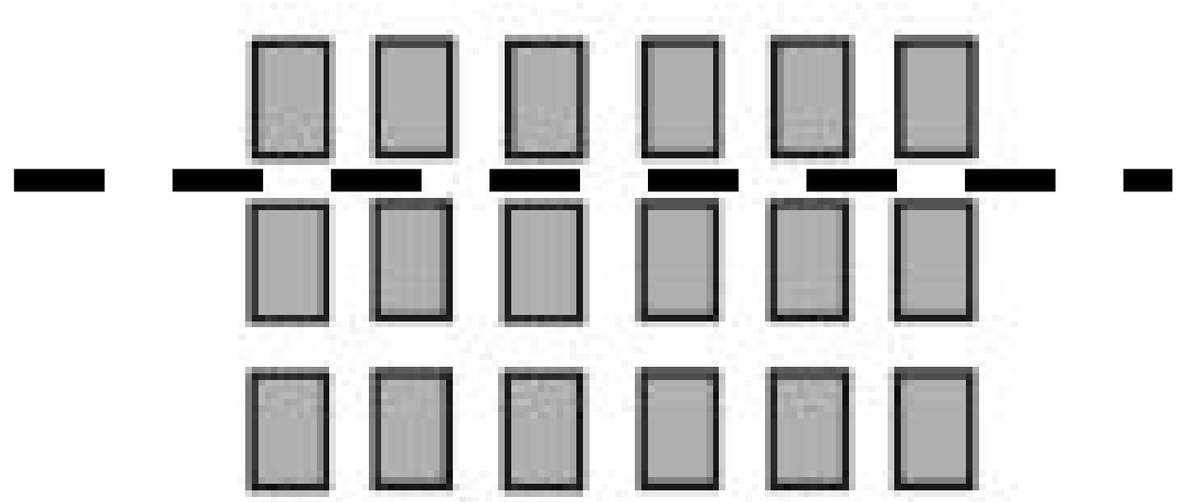
Let the number of strings on one guitar be 1 row.

Distributive Property with Arrays



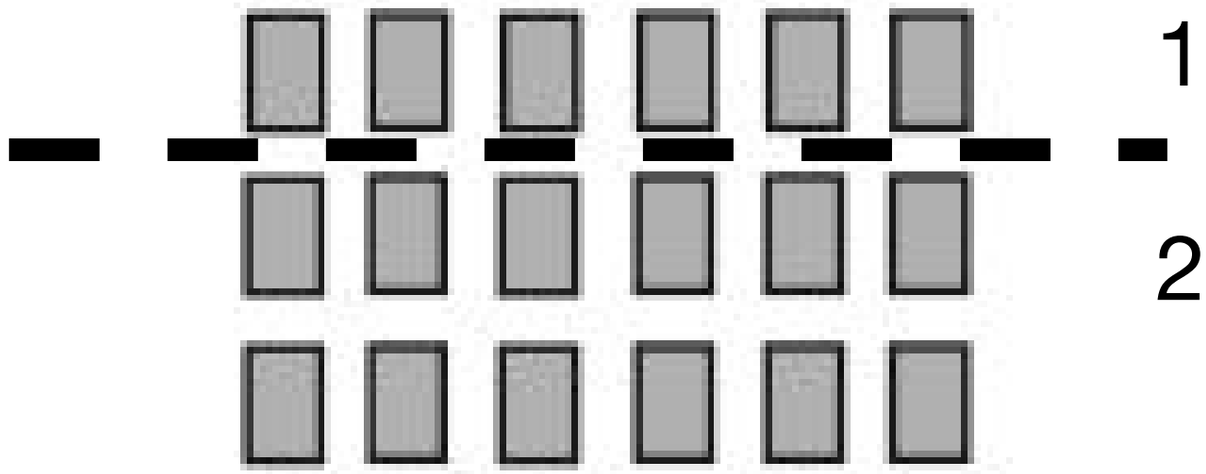
Make a dotted line below the first row to show just one guitar.

Distributive Property with Arrays



Write and solve a multiplication sentence to describe each part of your array.

Distributive Property with Arrays

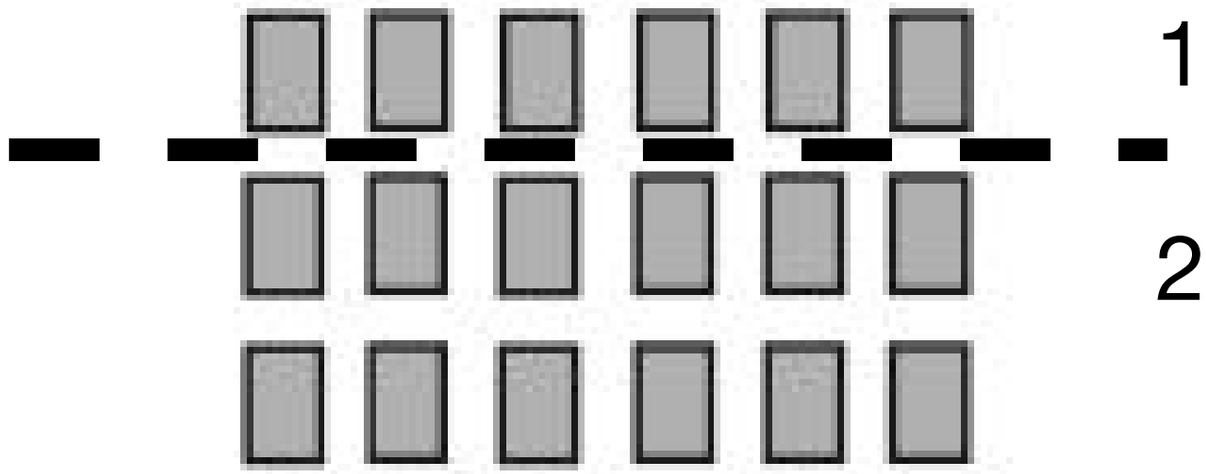


1 x 6 = 6

2 x 6 = 12

6 + 12 = 3 sixes. Why is this true?

Distributive Property with Arrays



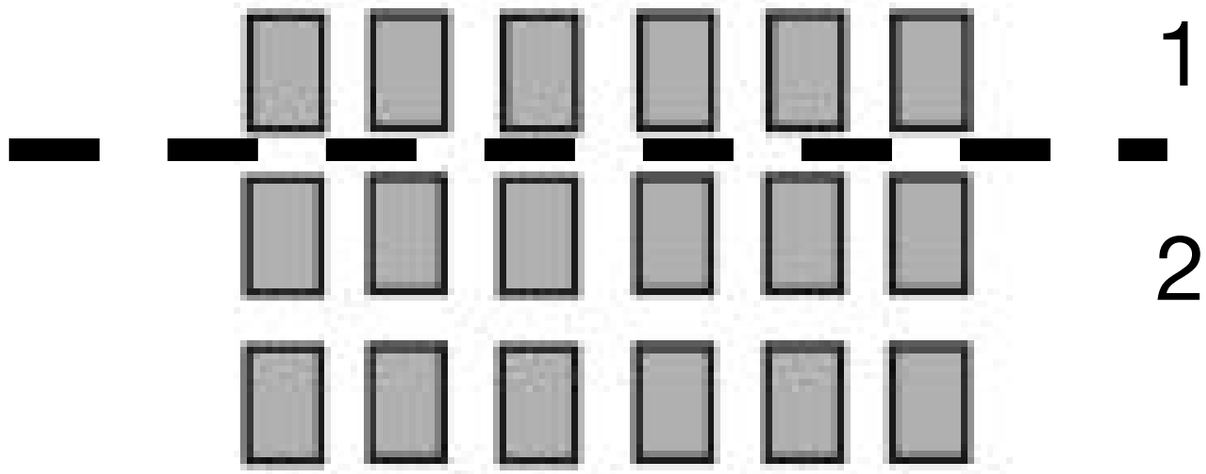
1 x 6 = 6

2 x 6 = 12

(1 x 6) + (2 x 6) = 3 sixes

How do you know this equation is true?

Distributive Property with Arrays



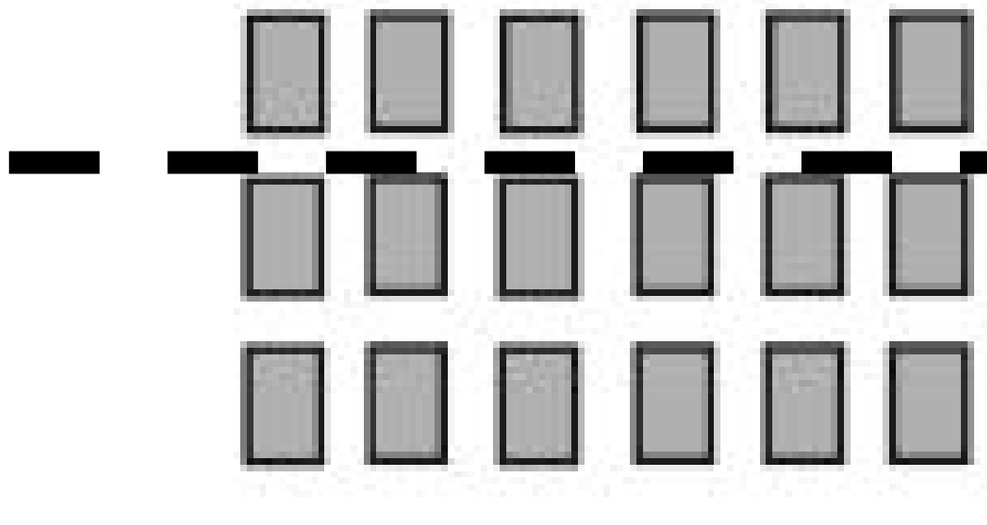
1 x 6 = 6

2 x 6 = 12

(1 x 6) + (2 x 6) = 6 + _____.

With your partner, discuss what number completes the equation.

Distributive Property with Arrays



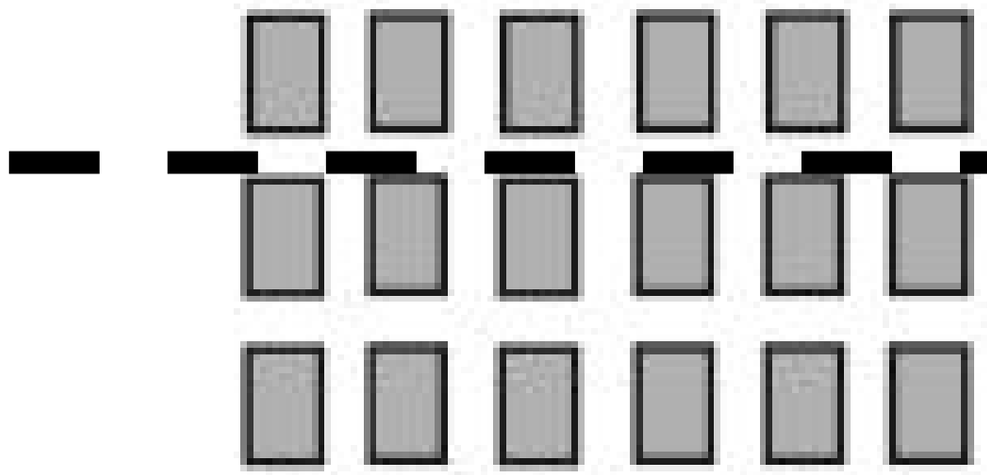
1 x 6 = 6

2 x 6 = 12

(1 x 6**)** + **(**2 x 6**)** = 6 + 12

Notice the symbols around my multiplication expressions. They are called **parentheses**. Let's say that word together.

Distributive Property with Arrays



1 x 6 = 6

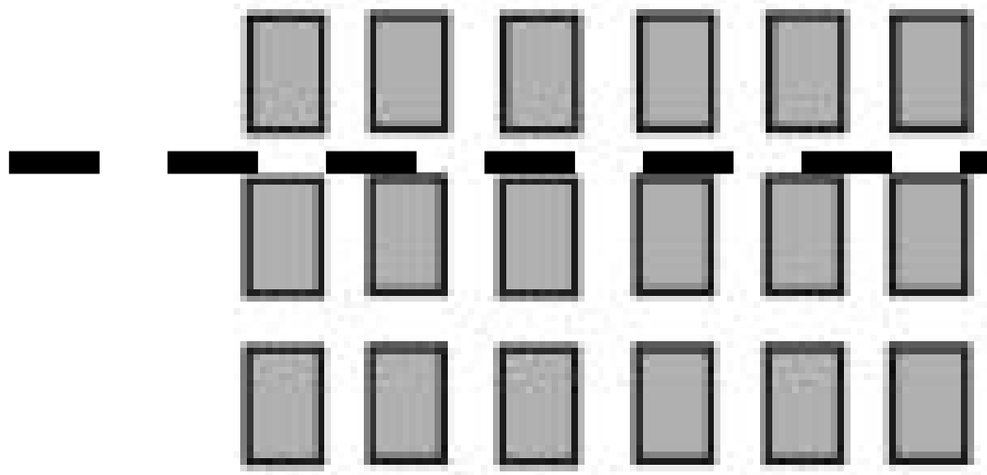
2 x 6 = 12

$(1 \times 6) + (2 \times 6) = \square$

$(1 + 2) \times 6 = \square$

My parentheses show how I make groups. How did I rearrange the groups?

Distributive Property with Arrays



1 x 6 = 6

2 x 6 = 12

$(1 + 2) \times 6 = \square$

Look back at the array you drew. Do the 1 and 2 represent the number of groups or the size of groups?

What does the 6 represent?

Distributive Property with Arrays

$(1 \times 6) + (2 \times 6) = \square$

$(1 + 2) \times 6 = \square$

Use that language -- the number of groups and the size of groups -- to tell your partner about my second equation.

1 + 2 equals....?

Distributive Property with Arrays

$(1 \times 6) + (2 \times 6) = \square$

$(1 + 2) \times 6 = \square$

$3 \times 6 = \square$

Look back at the work you did on today's Application Problem. How does this equation compare with what you did?

Rewrite each equation on your personal white board, and solve. What is the answer to all three equations?

Distributive Property with Arrays

$(1 \times 6) + (2 \times 6) =$ 18

$(1 + 2) \times 6 =$ 18

$3 \times 6 =$ 18

Think back to the problem we're solving. 18 what?

Distributive Property with Arrays

$(1 \times 6) + (2 \times 6) =$ 18

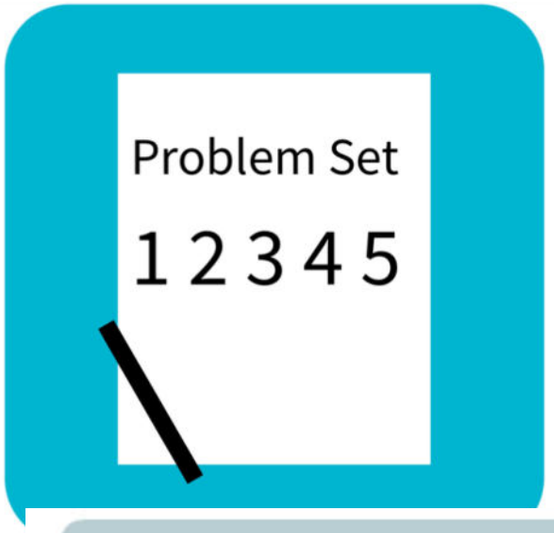
$(1 + 2) \times 6 =$ 18

$3 \times 6 =$ 18

True or false? $(1 \times 6) + (2 \times 6) = 3 \times 6$

In your own words, tell your partner how we got 3 x 6 and why it's equal to (1 x 6) + (2 x 6).

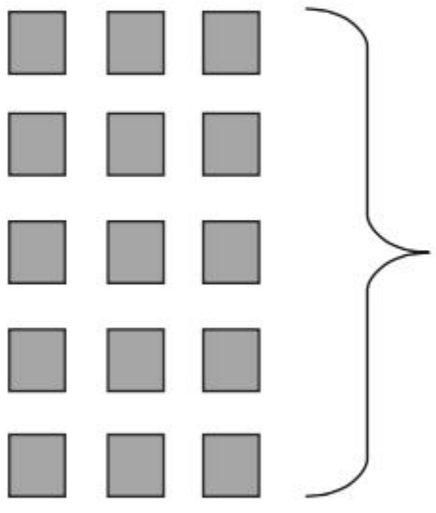
Use the three equations you just solved to help you explain.



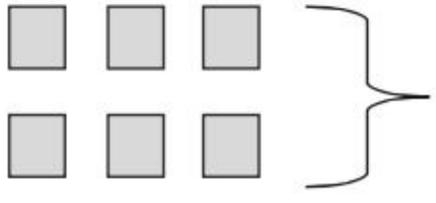
Problem Set

Name _____ Date _____

1. $7 \times 3 = (5 \times 3) + (2 \times 3) =$ _____

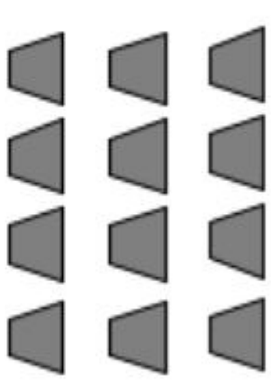


$(5 \times 3) = 15$

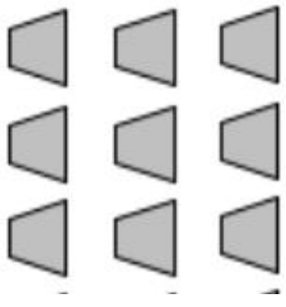


$(2 \times 3) =$ _____

2. $8 \times 3 = (4 \times 3) + (4 \times 3) =$ _____



(_____ × 3) = _____



(_____ × 3) = _____

Debrief

- In Problems 1 and 2, why might breaking the array into two parts to multiply, add, and then solve be easier than just multiplying the total number of groups times their size?

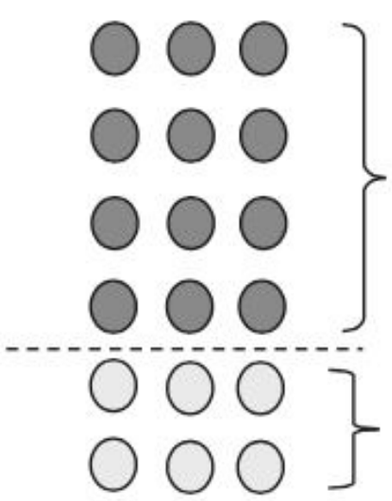
- Give me directions to check Problem 3(a). Tell me how to create the page in Ruby's photo album.

- Review the vocabulary term **parentheses**.

Exit Ticket

Name _____ Date _____

1. $6 \times 3 =$ _____



$(4 \times 3) =$ _____

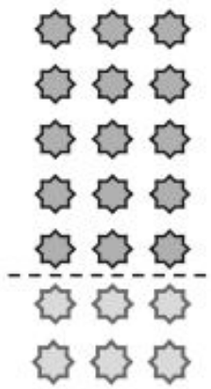
$(2 \times 3) =$ _____

$(4 \times 3) + (2 \times 3) =$ _____ + _____

$6 \times 3 =$ _____ + _____

_____ $\times 3 =$ _____

2. $7 \times 3 =$ _____



(_____ $\times 3) =$ _____

(_____ $\times 3) =$ _____

$(5 \times 3) + (2 \times 3) =$ _____ + _____

$7 \times 3 =$ _____ + _____

_____ $\times 3 =$ _____