Eureka Math

3rd Grade
Module 4
Lesson 10

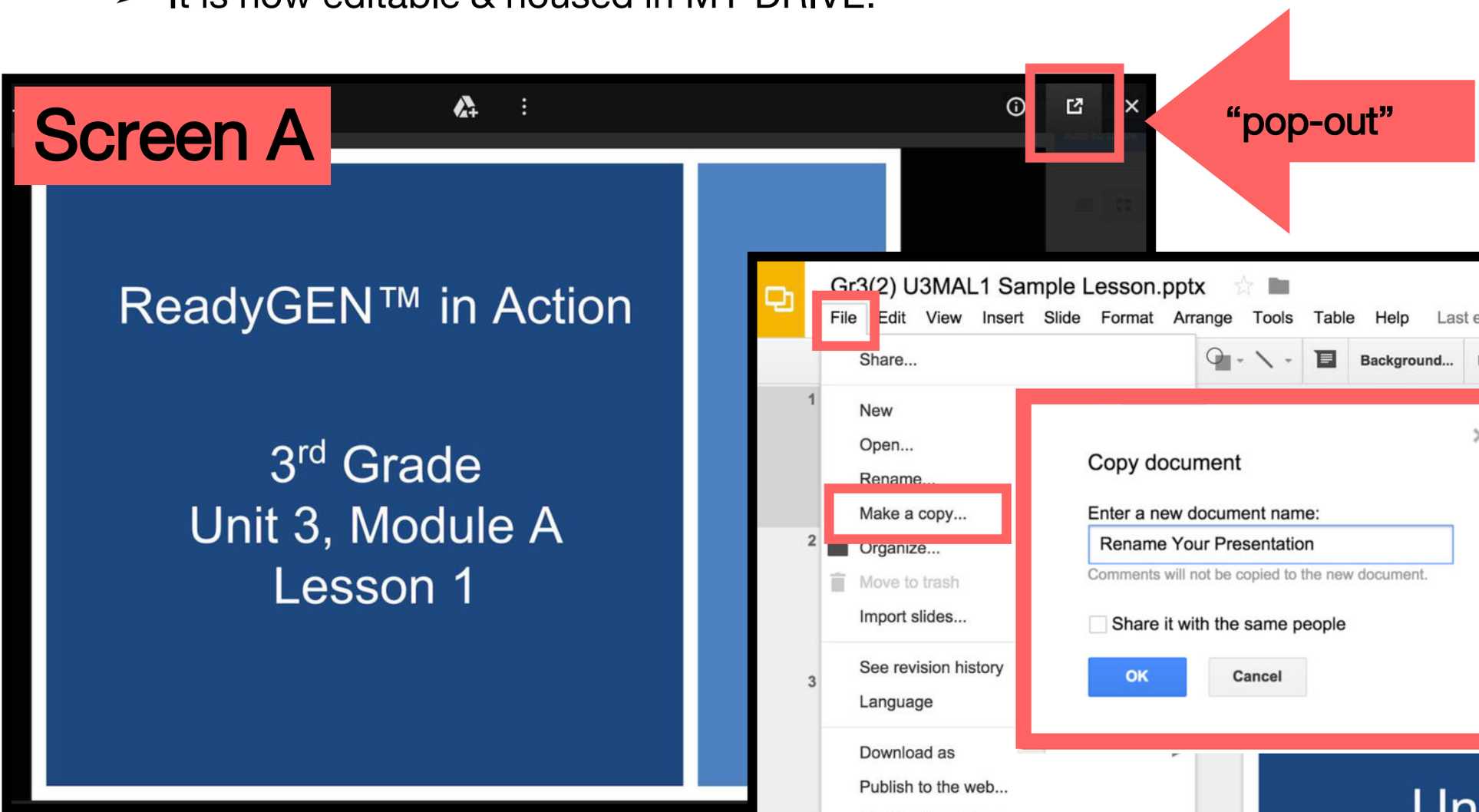
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

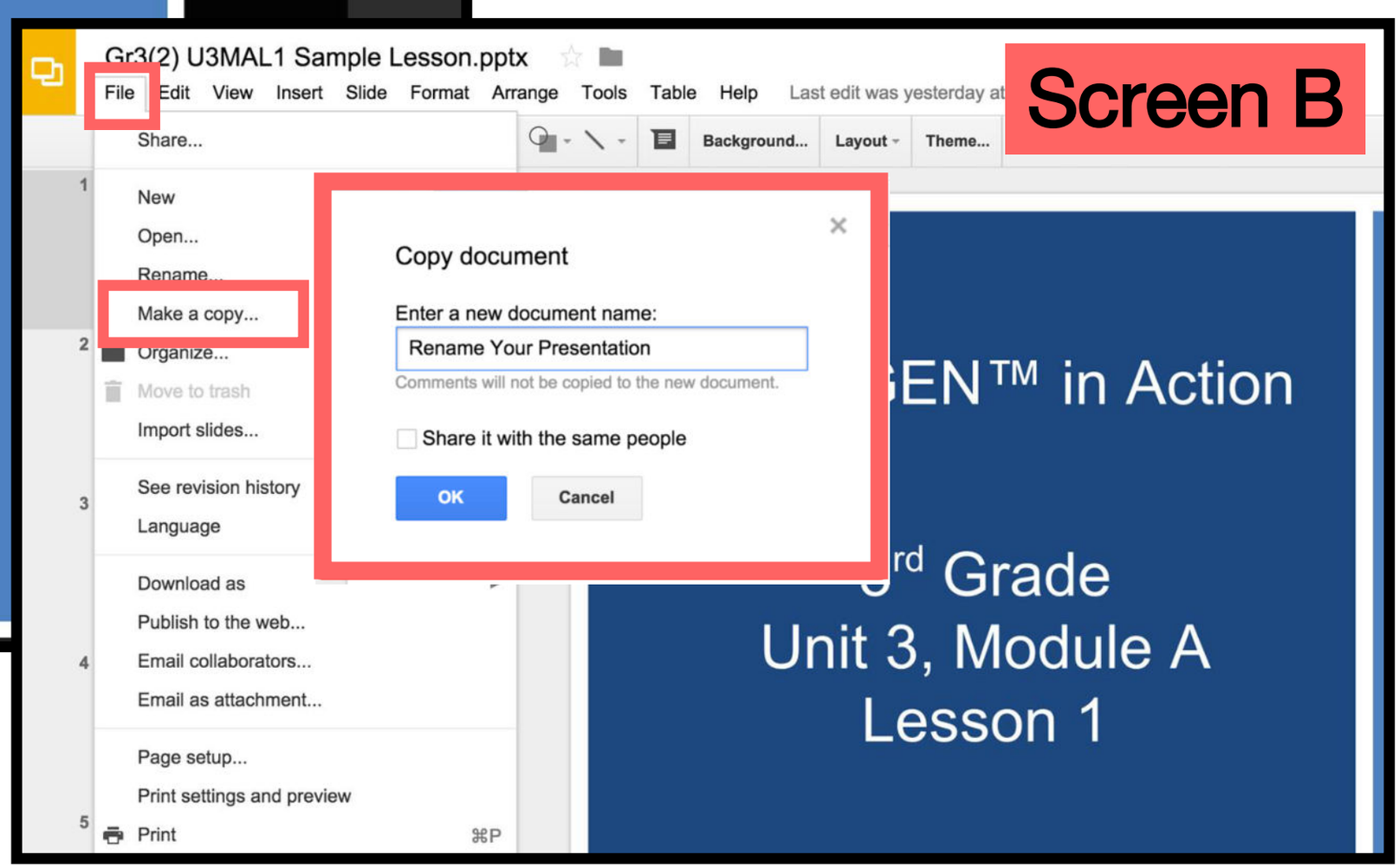
Directions for customizing presentations are available on the next slide.

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

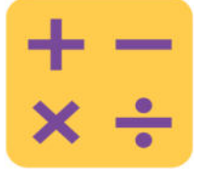
Read, Draw, Write

Learning Target

Personal White Board

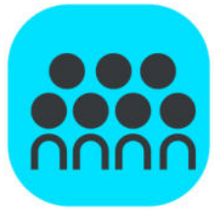
Problem Set

Manipulatives Needed



Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

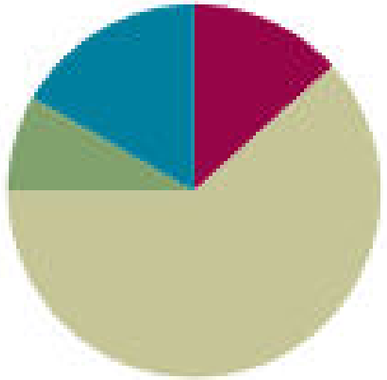
Small Group Time

Lesson 10

Objective: Apply the distributive property as a strategy to find the total area of a large rectangle by adding two products.

Suggested Lesson Structure

Fluency Practice	(8 minutes)
Application Problem	(5 minutes)
Concept Development	(37 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



I can use the distributive property as a strategy to find the total area of a large rectangle by adding two products.

Fluency Practice

Group Counting

Count forward and backward as I indicate with pointing my finger, by...

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

Fluency Practice

Find the Unknown Factor

Write each equation, and fill in the unknown factor.

4 x ____ = 12

6 x ____ = 12

1 x ____ = 12

3 x ____ = 12

Do you notice a pattern?

A: These are all factors of 12.

Fluency Practice

Find the Unknown Factor

Write each equation, and fill in the unknown factor.

8 x ____ = 24

6 x ____ = 24

2 x ____ = 24

4 x ____ = 24

Do you notice a pattern?

A: These are all factors of 24.

Fluency Practice

Find the Unknown Factor

Write each equation, and fill in the unknown factor.

9 x ____ = 36

12 x ____ = 36

6 x ____ = 36

3 x ____ = 36

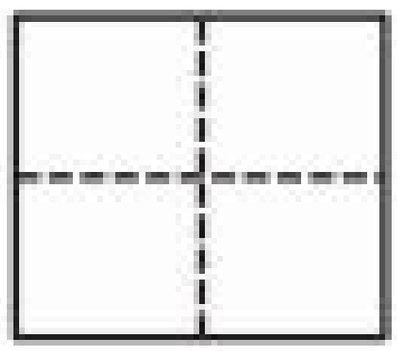
4 x ____ = 36

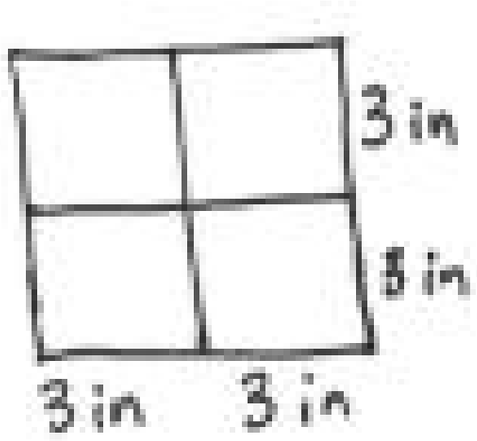
Do you notice a pattern?

A: These are all factors of 36.

Application Problem

Sonya folds a 6-inch by 6-inch piece of paper into 4 equal parts (shown below). What is the area of 1 of the parts?





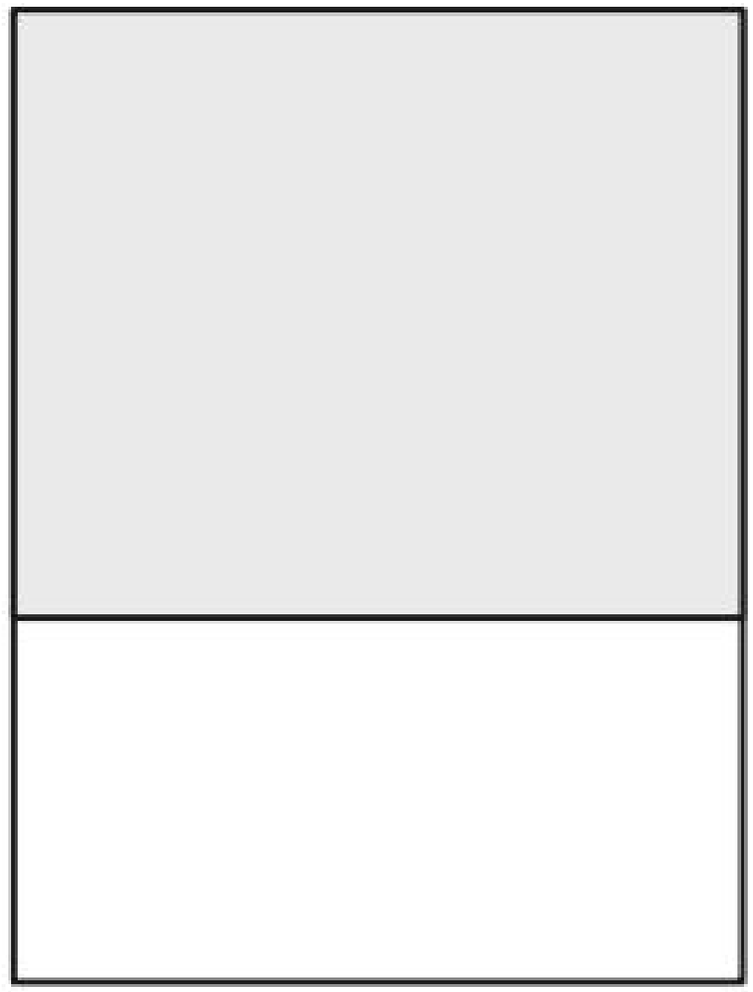
What is the area of the whole paper?

Concept Development

Get your tiling template.

There are 3 rectangles we will focus on:

a. The large rectangle
b. The shaded rectangle
c. The unshaded rectangle



★Trace each rectangle with your finger.

★ Go to the next slide.

Concept Development

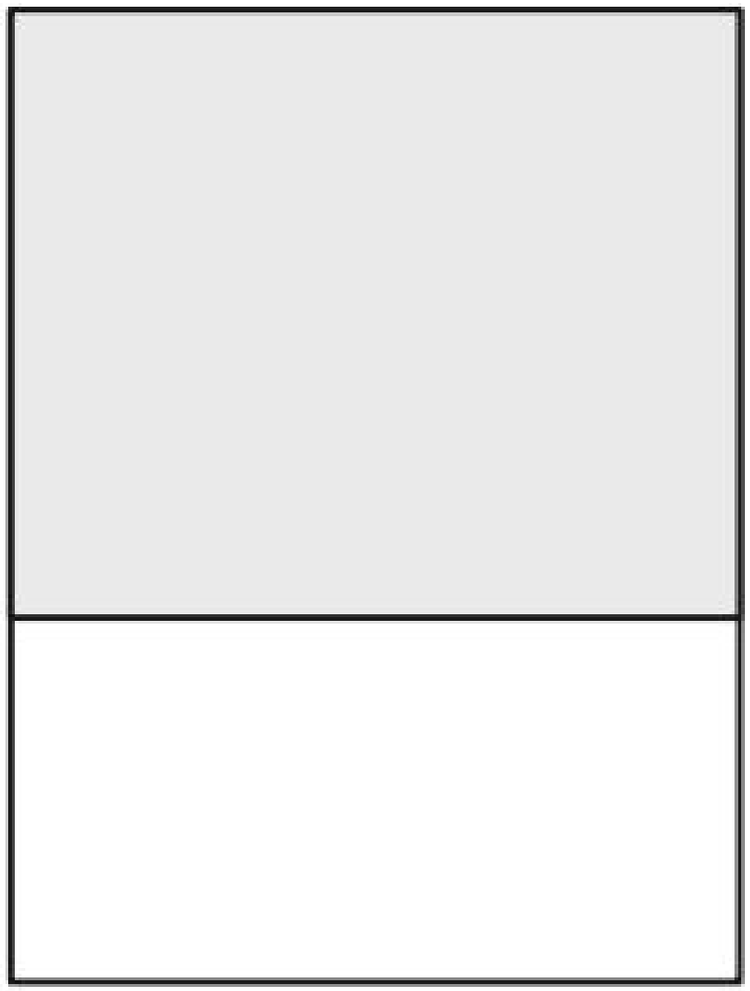
Use your tiles:

- What is the area of the large rectangle?

- Use your tiles to find the side lengths of the shaded rectangle.

- What are the side lengths?
  (Label with #'s on your template)

- What multiplication expression can you use to find the area of the shaded rectangle? **(Write it next to the rectangle)**



Concept Development

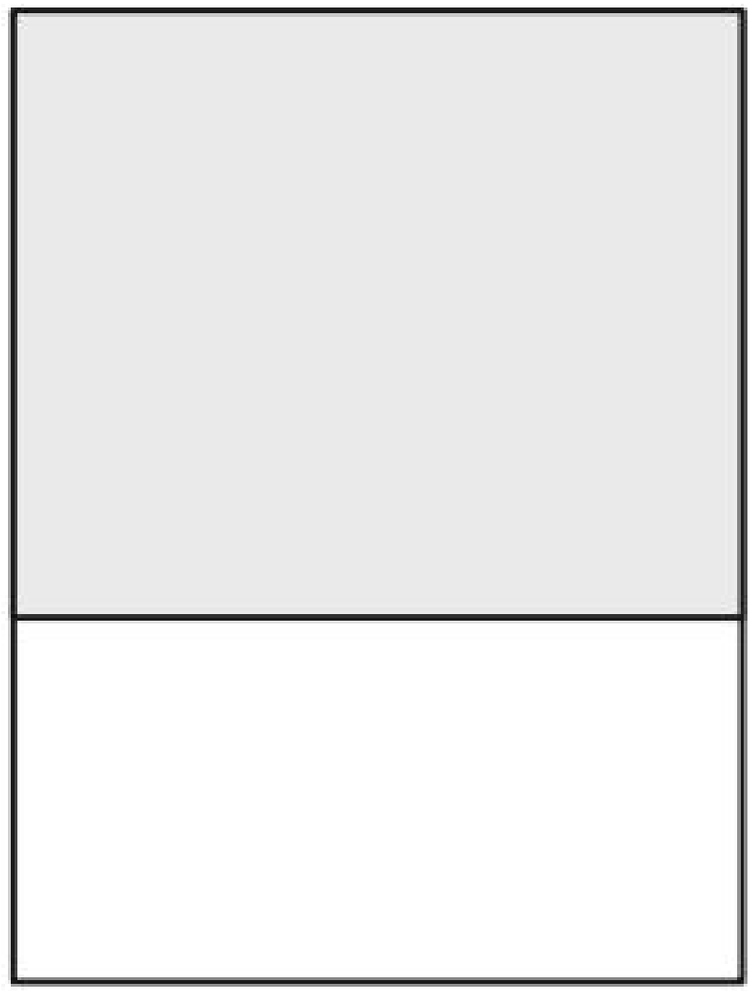
Use your tiles:

- What side length do we already know for the **unshaded** rectangle?

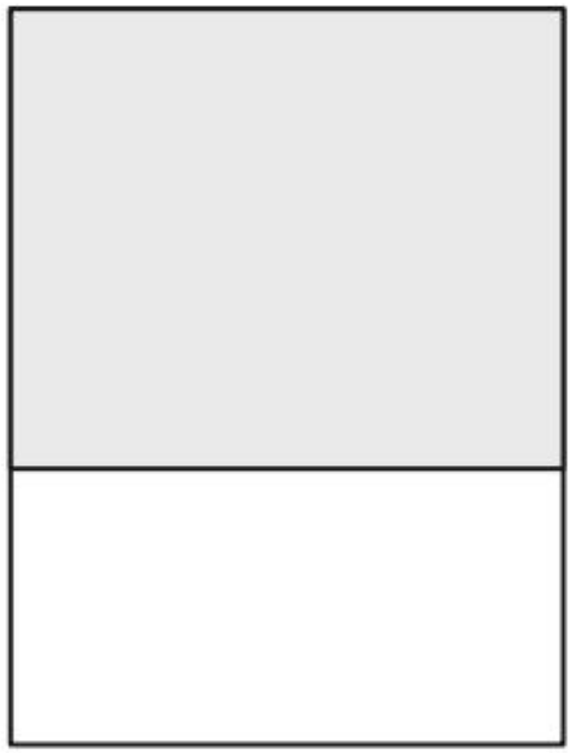
- Use your tiles to find the other side length for the **unshaded** rectangle and label that side.

- What multiplication expression can you use to find the area of the **unshaded** rectangle? **(Write it next to the rectangle)**

- How can we use the two expression to help us find the total area of the large rectangle?



Concept Development



5 x 6

3 x 6

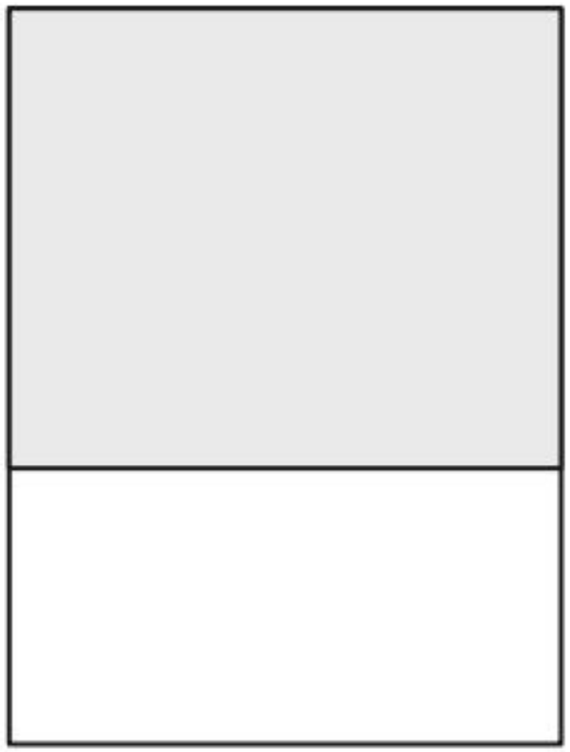
Write a number sentence to show how you would find the area of the large rectangle.

(5 x 6) + (3 x 6)

Now Solve...

Is this the same answer you got when you tiled the whole rectangle?

Concept Development



5 x 6

3 x 6

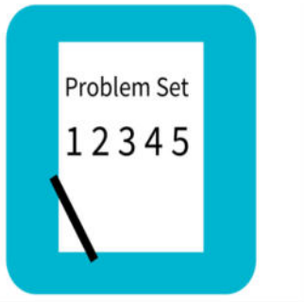
What two numbers are we adding to show the length of the large rectangle?

5 + 3

What will you multiply to find the answer?
Add that to your expression and think about where the parentheses will go?

(5 + 3) x 6

What will this equal?

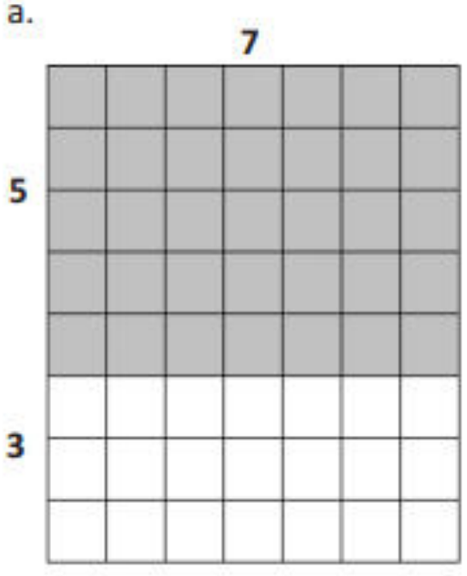


Problem Set

Name _____ Date _____

1. Label the side lengths of the shaded and unshaded rectangles when needed. Then, find the total area of the large rectangle by adding the areas of the two smaller rectangles.

a.



$8 \times 7 = (5 + 3) \times 7$

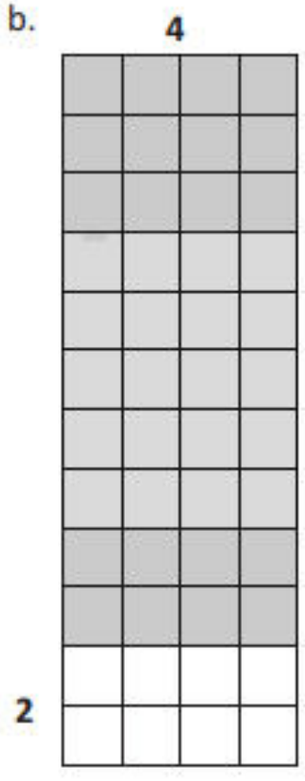
$= (5 \times 7) + (3 \times 7)$

$=$ _____ + _____

$=$ _____

Area: _____ square units

b.



$12 \times 4 = (\_\_\_\_\_ + 2) \times 4$

$= (\_\_\_\_\_ \times 4) + (2 \times 4)$

$=$ _____ + 8

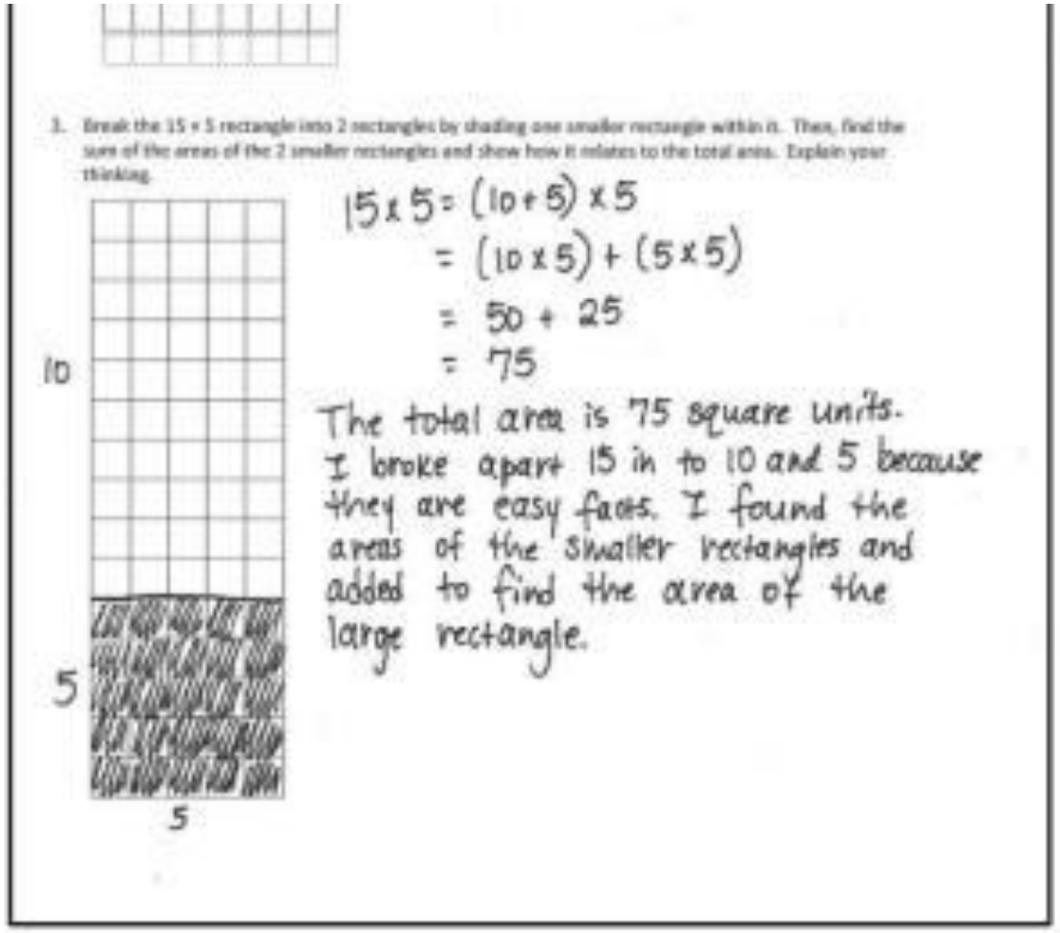
$=$ _____

Area: _____ square units

Debrief

Any combination of the questions below may be used to lead the discussion.

- How is the rectangle in Problem 1(a) similar to the rectangle you **tiled** in today's lesson? How is it different?
- What are the side lengths of the large rectangle in Problem 1(c)? Can you multiply these side lengths to find the area? How does the break apart and distribute strategy help you?
- Without multiplying the side lengths of the large rectangle in Problem 1(d), how could you check to make sure your answer is right? (Students might say count the squares or skip-count by eight 12 times.) Discuss with a partner which strategy is most efficient—either counting squares, skip-counting, or using the break apart and distribute strategy.



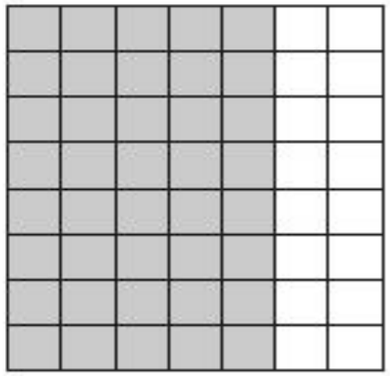
- How was setting up and solving Problem 2 different from the other problems?
- What side length did you break apart in Problem 3, and how did you break it apart? Why?
- With a partner, list as many possibilities as you can for how you could use the break apart and distribute strategy to find the area of a rectangle with side lengths of 20 and 7. Can we break it into 3 parts if we want to? Which one of your possibilities would you use to solve this problem? Why?

Exit Ticket

Name _____ Date _____

Label the side lengths of the shaded and unshaded rectangles. Then, find the total area of the large rectangle by adding the areas of the 2 smaller rectangles.

1.



$8 \times 7 = 8 \times (\_\_\_\_\_ + \_\_\_\_\_)$

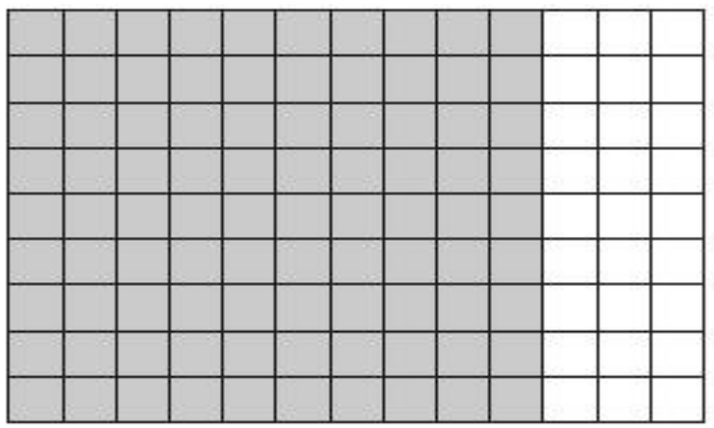
$= (8 \times \_\_\_\_\_) + (8 \times \_\_\_\_\_)$

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

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

Area: _____ square units

2.



$9 \times 13 = 9 \times (\_\_\_\_\_ + \_\_\_\_\_)$

$= (\_\_\_\_\_ \times \_\_\_\_\_) + (\_\_\_\_\_ \times \_\_\_\_\_)$

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

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

Area: _____ square units