Material List

(S) Blank paper

(S) 15 square-inch tiles per student, straight edge

(S) Personal white board

Eureka Math

3rd Grade
Module 4
Lesson 5

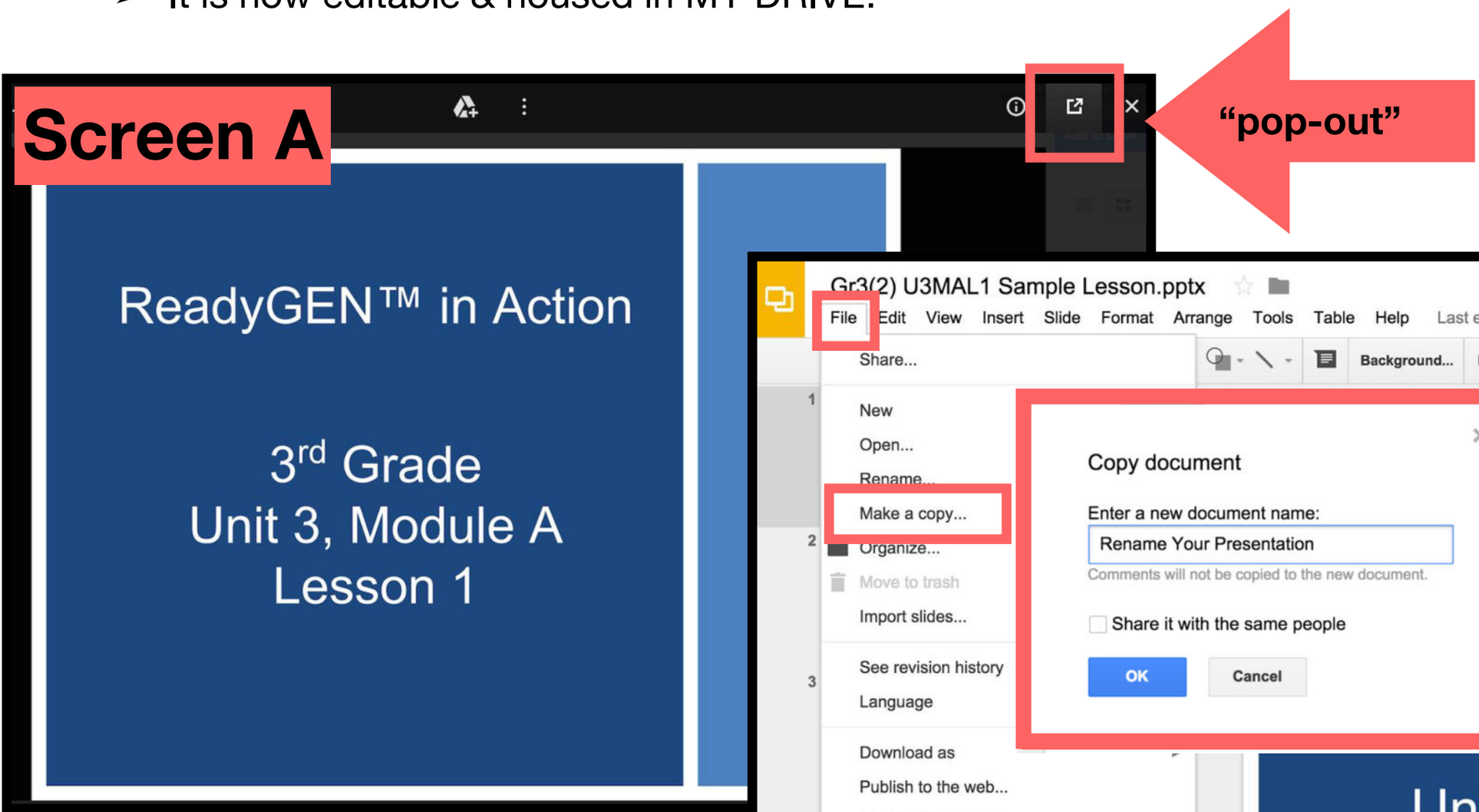
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

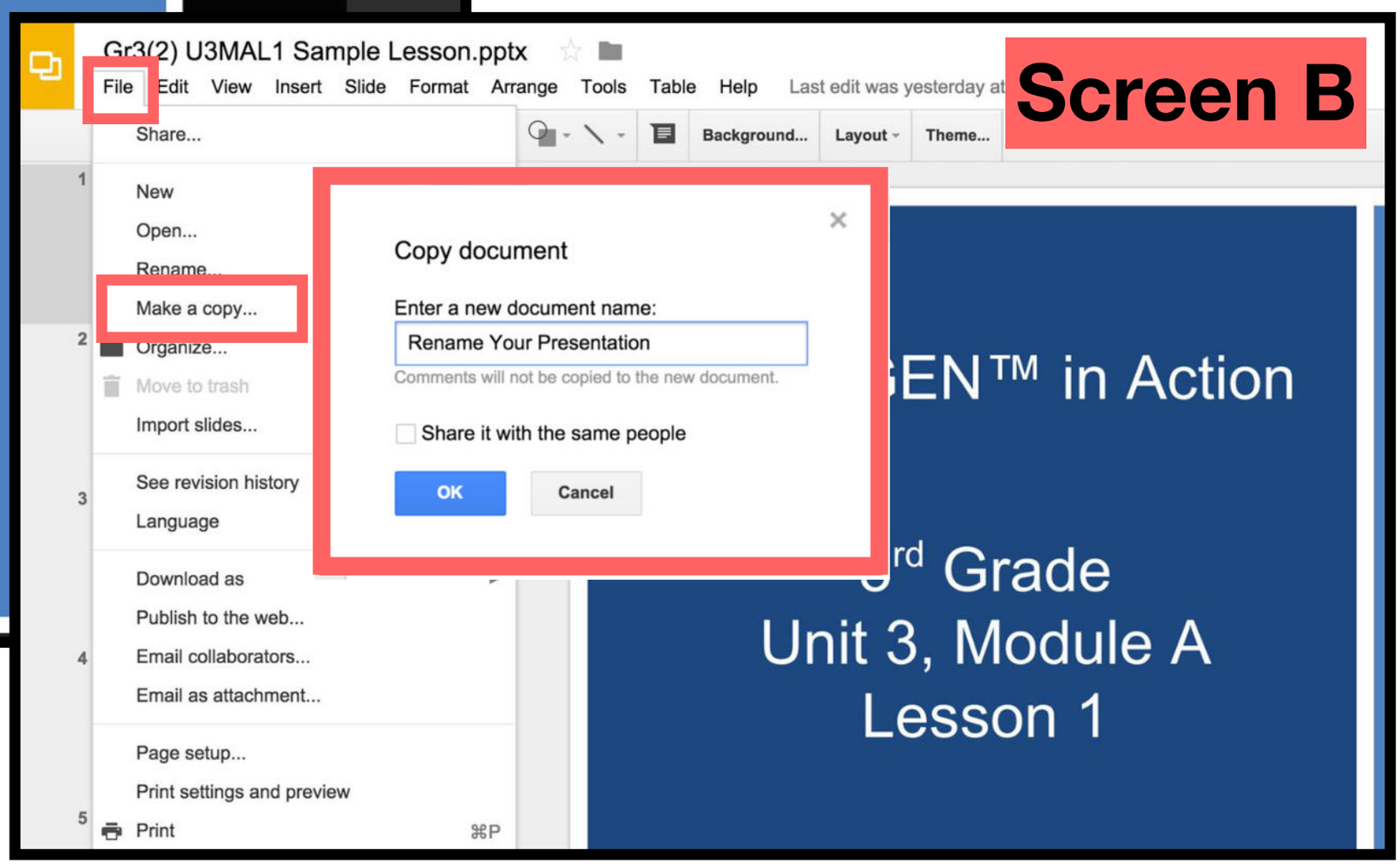
Directions for customizing presentations are available on the next slide.

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.



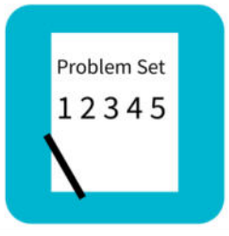


Icons

Read, Draw, Write

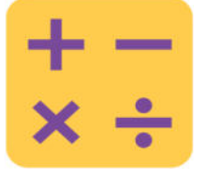
Learning Target

Personal White Board



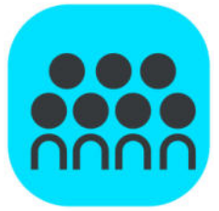
Problem Set

Manipulatives Needed



Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

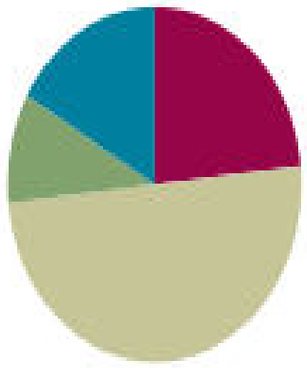
Small Group Time

Lesson 5

Objective: Form rectangles by tiling with unit squares to make arrays.

Suggested Lesson Structure

Fluency Practice	(14 minutes)
Application Problem	(6 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



I can form rectangles by tiling with unit squares to make arrays.

Fluency Practice

Group Counting

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

Threes to 30

Fluency Practice

Group Counting

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

Sixes to 60

Fluency Practice

Group Counting

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

Sevens to 70

Fluency Practice

Group Counting

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

Nines to 90

Fluency Practice

Products in an Array

How many rows of stars do you see?

4 rows

Fluency Practice

Products in an Array

How many stars are in each row?

3 stars

Fluency Practice

Products in an Array

On your personal white board, write two different multiplication sentences that can be used to find the total number of stars.

4 X 3= 12 and 3 X 4= 12

Fluency Practice

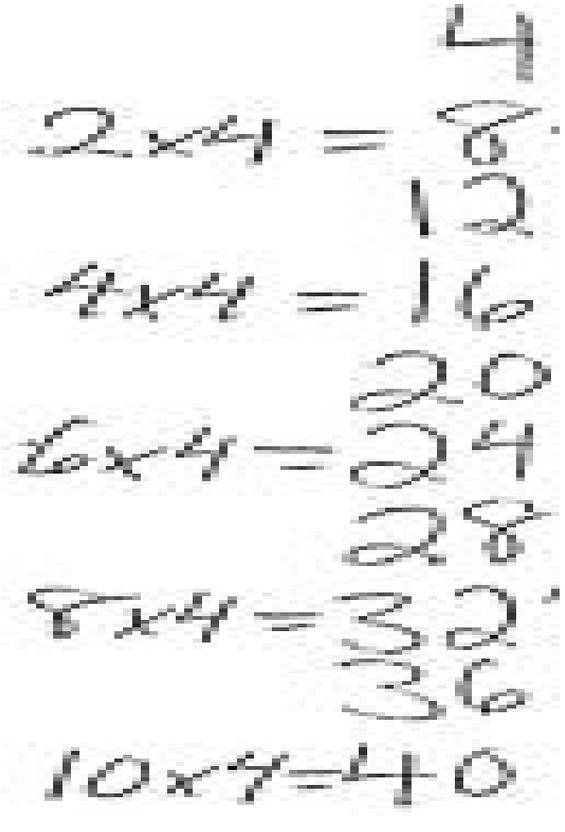
Find the Common Products

Count by 4's to 40 and count by 8's to 80

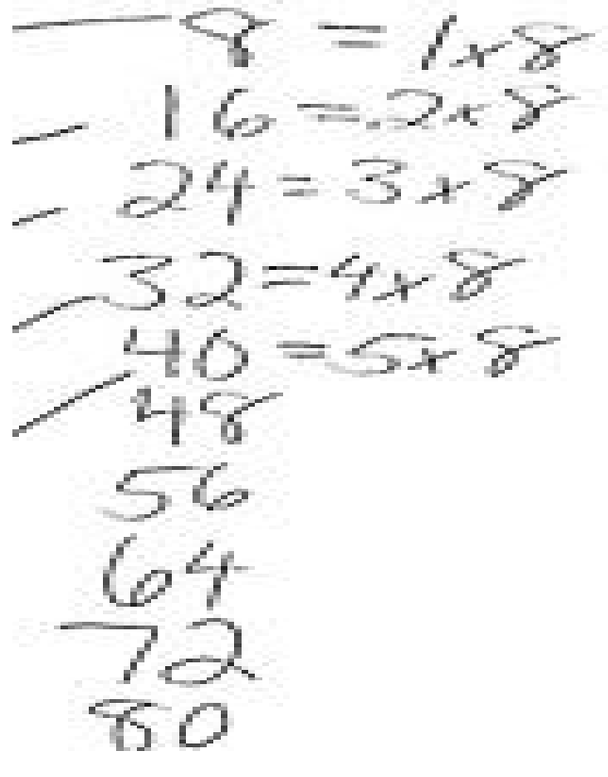
Match the multiples in each column.

4	8
8	16
12	24
16	32
20	40
24	48
28	56
32	64
36	72
40	80

Next to each matched product on the left half of the paper.) Write the rest of the equations like I did.



Next to each matched product on the right half of the paper.) Write the rest of the equations like I did.



Application Problem

Candice uses square centimeter tiles to find the side lengths of a rectangle as shown on the right. She says the side lengths are 5 centimeters and 7 centimeters. Her partner, Luis, uses a ruler to check Candice's work and says that the side lengths are 5 centimeters and 6 centimeters. Who is right? How do you know?

Application Problem

Candice uses square centimeter tiles to find the side lengths of a rectangle as shown on the right. She says the side lengths are 5 centimeters and 7 centimeters. Her partner, Luis, uses a ruler to check Candice's work and says that the side lengths are 5 centimeters and 6 centimeters. Who is right? How do you know?

Candice is right because she used square centimeter tiles to find the side lengths and when I counted the tiles there were 5 on one side 7 on the other side. That means that the side lengths are 5 cm and 7 cm.

Concept Development

What information do we know?

Use tiles to make the known side.

Concept Development

How many total tiles will we use to make our rectangles?

Area= 12 square inches

12 tiles

Concept Development

How many twos are in 12?

Area= 12 square inches

6 twos.

Concept Development

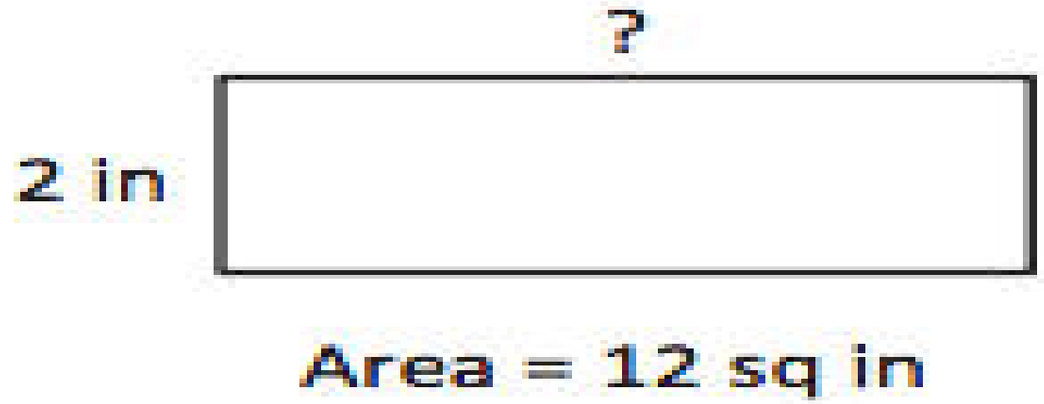
Use your tiles to make 6 sets of twos, then skip-count to check your work.

Push your twos together to make a rectangle.

What is the unknown side length?

Concept Development

Tell your partner about the relationship between the side lengths and the area. Write an equation to show your thinking. Be sure to include the units.

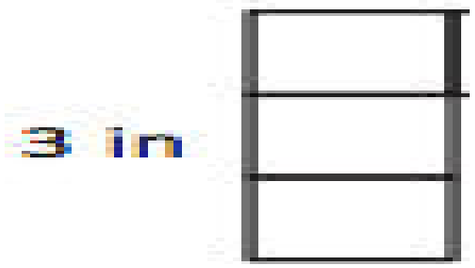


2 inches × 6 inches = 12 square inches, so the area is the product of the side lengths.

Concept Development

Use tiles to make a side 3 inches tall.

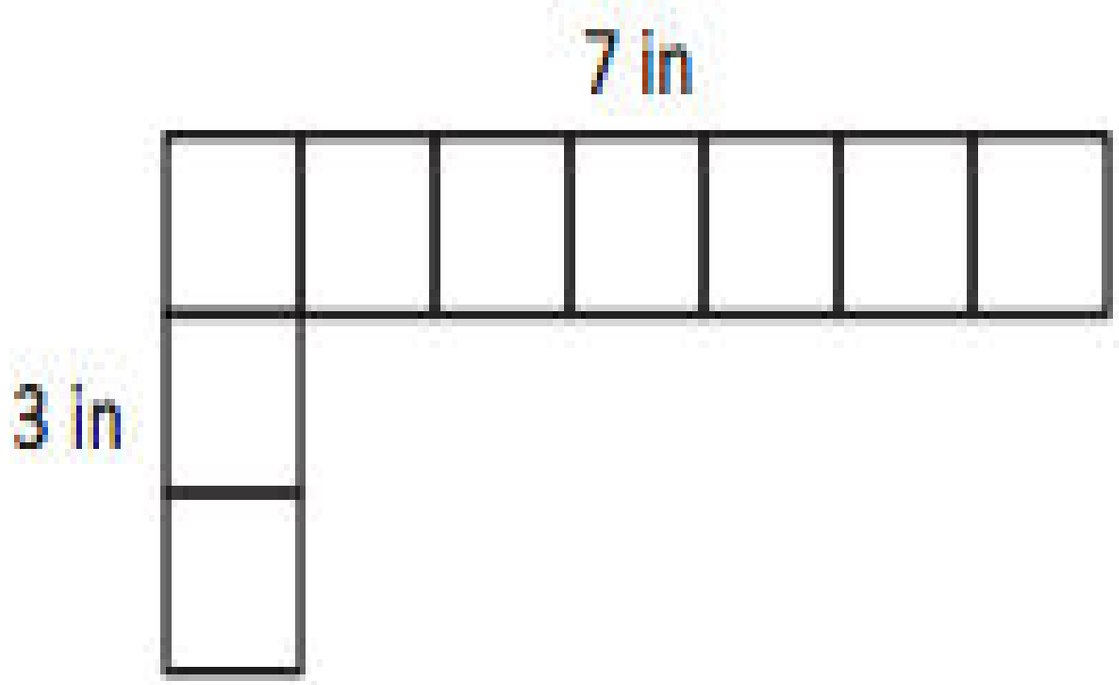
Trace the outline of all three tiles.



Label the side length.

Concept Development

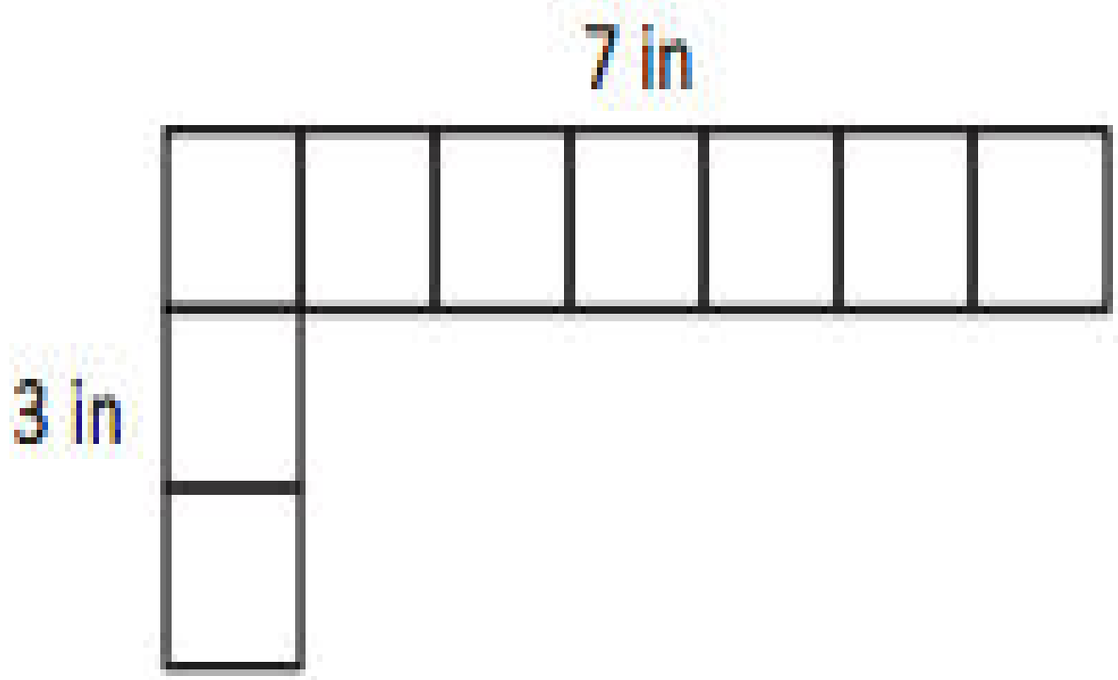
Use tiles to make another side 7 inches long and trace.



Label the side length.

Concept Development

How many threes will be in this rectangle?



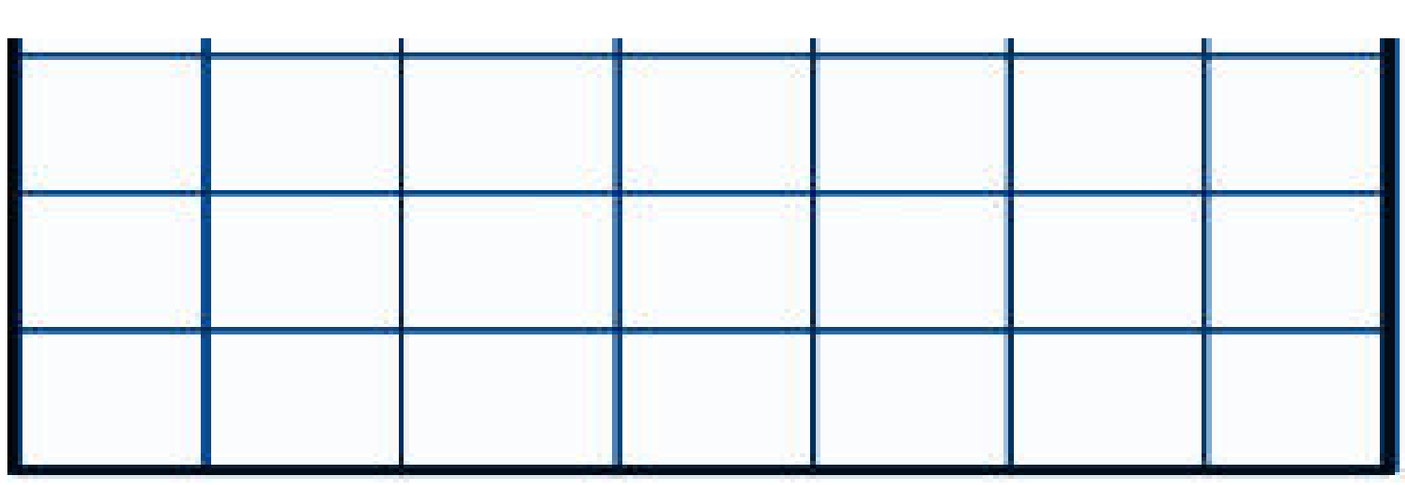
What strategy could you use to find the total area?

Concept Development

Draw the rest of the tiles in the rectangle.
Then skip-count to find the total area.

7 in

3 in

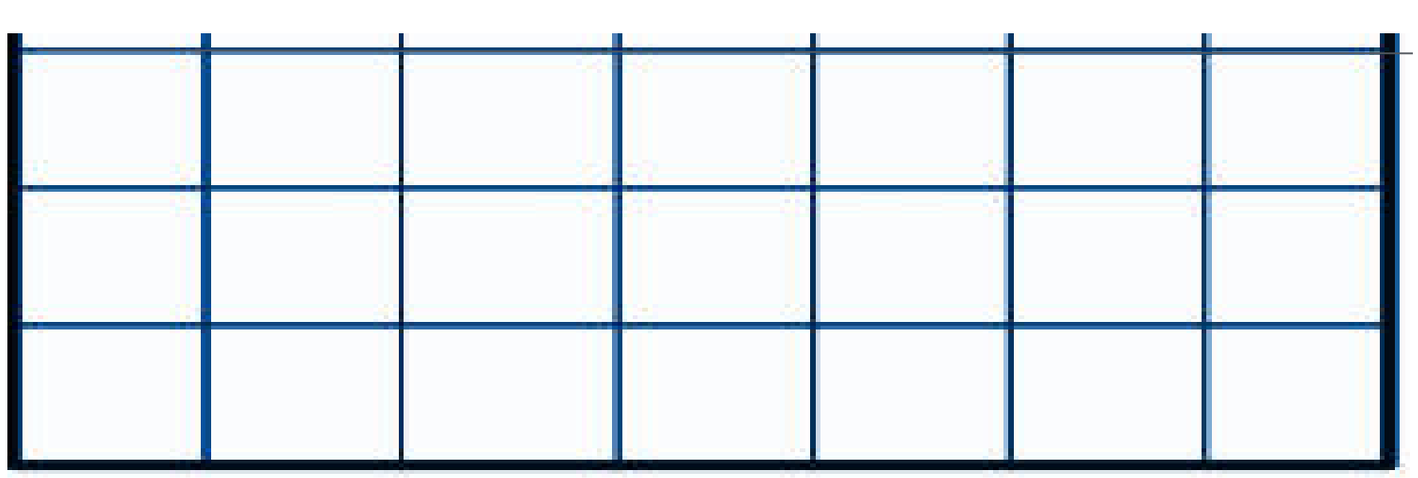


Concept Development

7 inches X 3 inches = 21 square inches

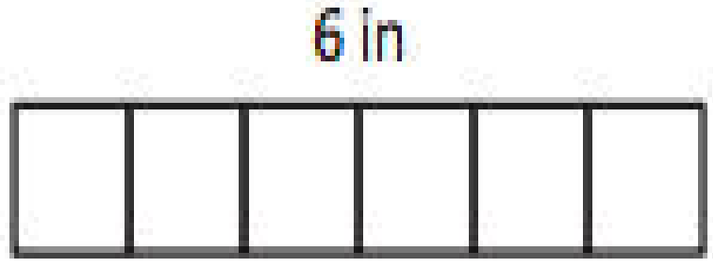
7 in

3 in



Concept Development

Make a side length of 6 in.
Label the side length.

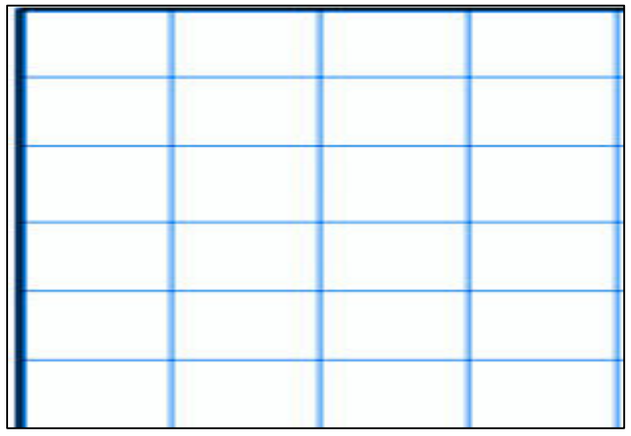


How can you use the following equation to find the other side length?

$6 \times S = 24$

Concept Development

Choose a strategy to find the other side length? What is the other side length?.



6 x ____ = 24

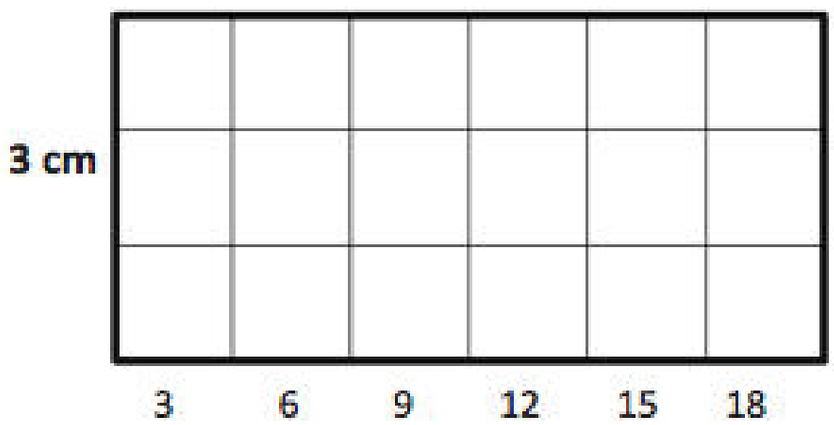
4 square inches!

Problem Set

Name _____ Date _____

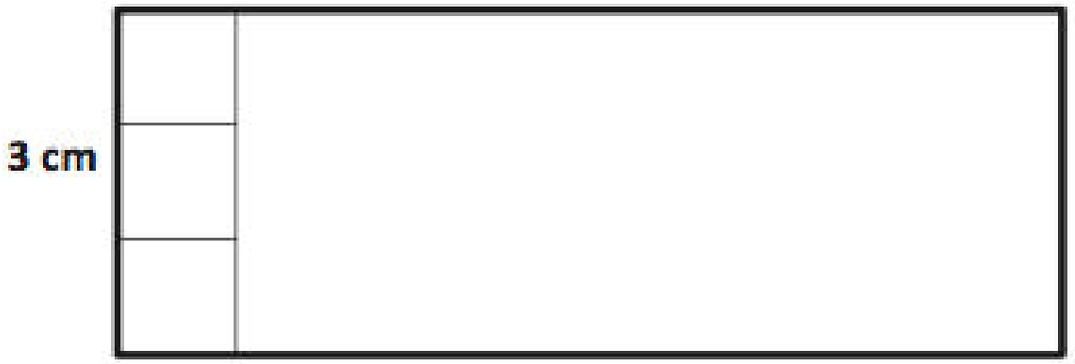
1. Use the centimeter side of a ruler to draw in the tiles, and then skip-count to find the unknown area. Write a multiplication sentence for each tiled rectangle.

a. Area: **18** square centimeters.



3 × _____ = 18

d. Area: **24** square centimeters.



_____ × _____ = _____

Debrief

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

Compare Problems 1(b) and 1(e) and Problems 1(a) and 1(c). How does each pair show commutativity?

How many more threes does the array in Problem 1(d) have compared to the array in Problem 1(a)? How might the side lengths help you know that, even without seeing the tiled array?

Compare Problems 1(c) and 1(f). How are the areas related? (The area of 1(f) is half the area of 1(c).) How might you have figured that out just by knowing the side lengths of each array? In Problem 2, what strategy did you use to find the unknown side length? Is there another way you could have figured it out?

Students may have different solutions for Problem 3. Invite them to share and compare their work.

Exit Ticket

Name _____ Date _____

Darren has a total of 28 square centimeter tiles. He arranges them into 7 equal rows. Draw Darren's rectangle. Label the side lengths, and write a multiplication sentence to find the total area.