A NOTE ON STANDARDS ALIGNMENT:

In Module 2, students convert metric mass units to add and subtract mixed units. This lesson builds on the content of **2.MD.5** and **3.MD.2**.

Occasionally, students work beyond the **4.MD.1** and **4.MD.2** standards by converting from a smaller unit to a larger unit. They do this by creating a connection between metric units and place value units.

Develop students' basic number sense to make these conversions, and always accept answers in the smaller unit.

Eureka Math

4th Grade Module 2 Lesson 4

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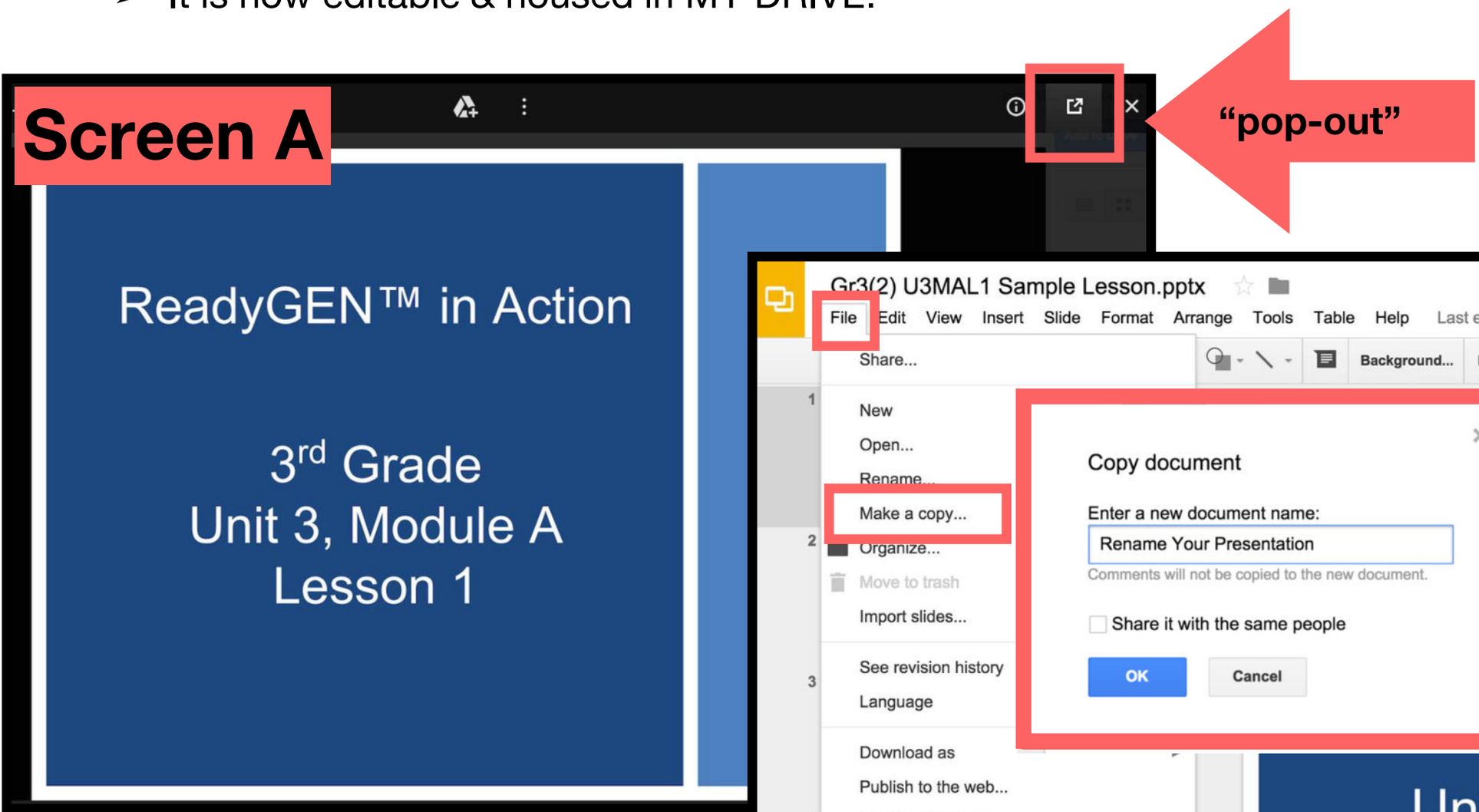
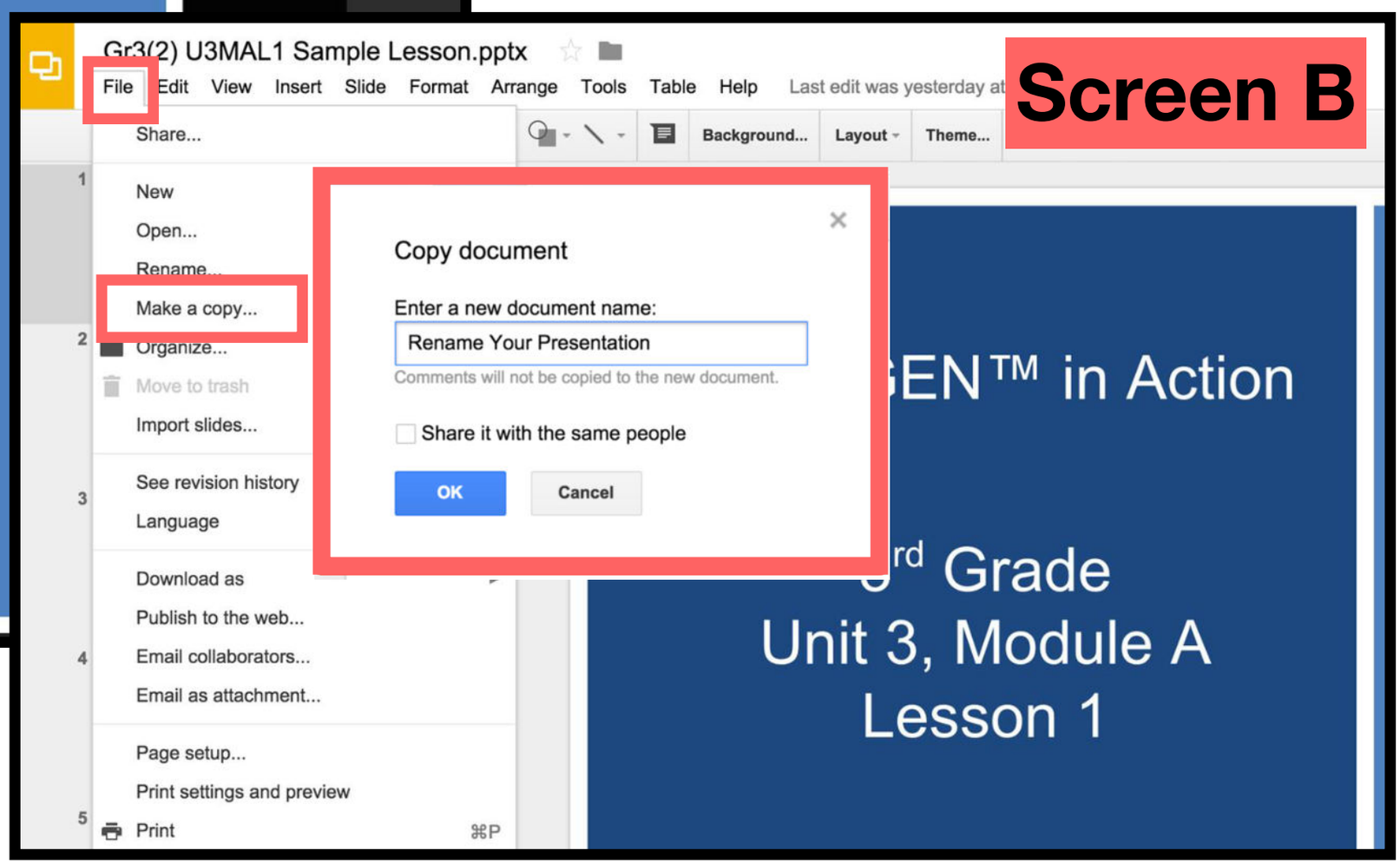
Directions for customizing presentations are available on the next slide.

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.



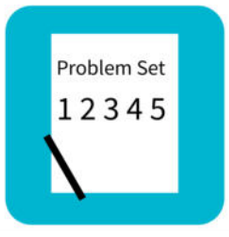


Icons

Read, Draw, Write

Learning Target

Personal White Board

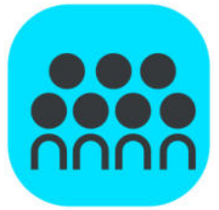


Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

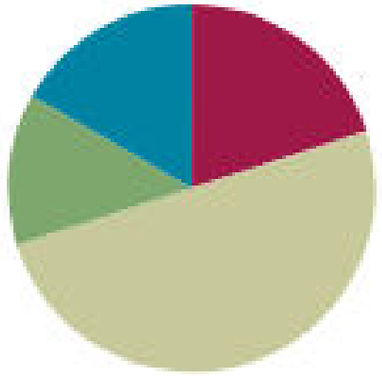
Small Group Time

Lesson 4

Objective: Know and relate metric units to place value units in order to express measurements in different units.

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(8 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



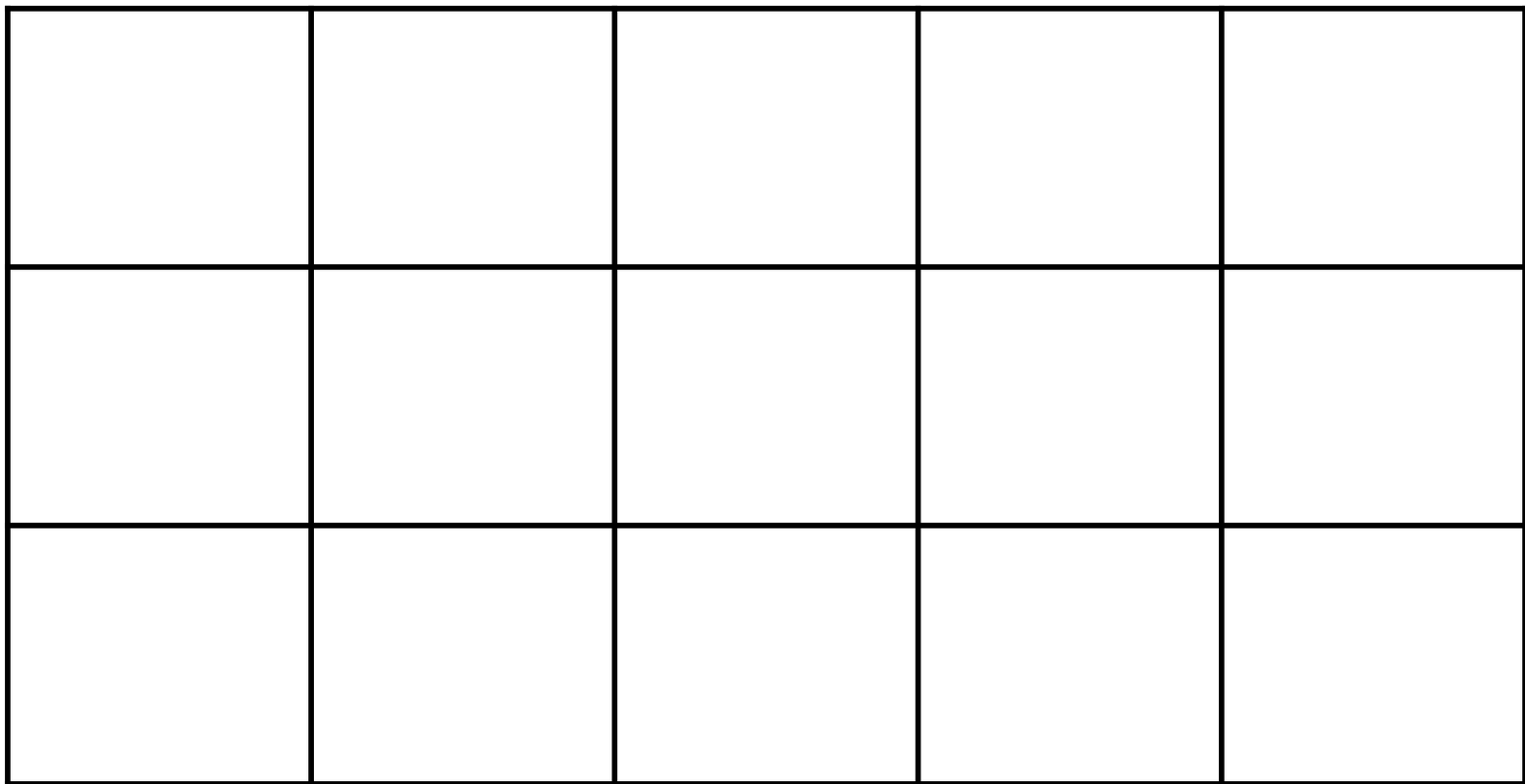
Know and relate metric units to place value units in order to express measurements in different units.

Perimeter and Area

What's the length of the longest side?

What's the length of the opposite side?

What's the sum of the rectangle's two longest sides?

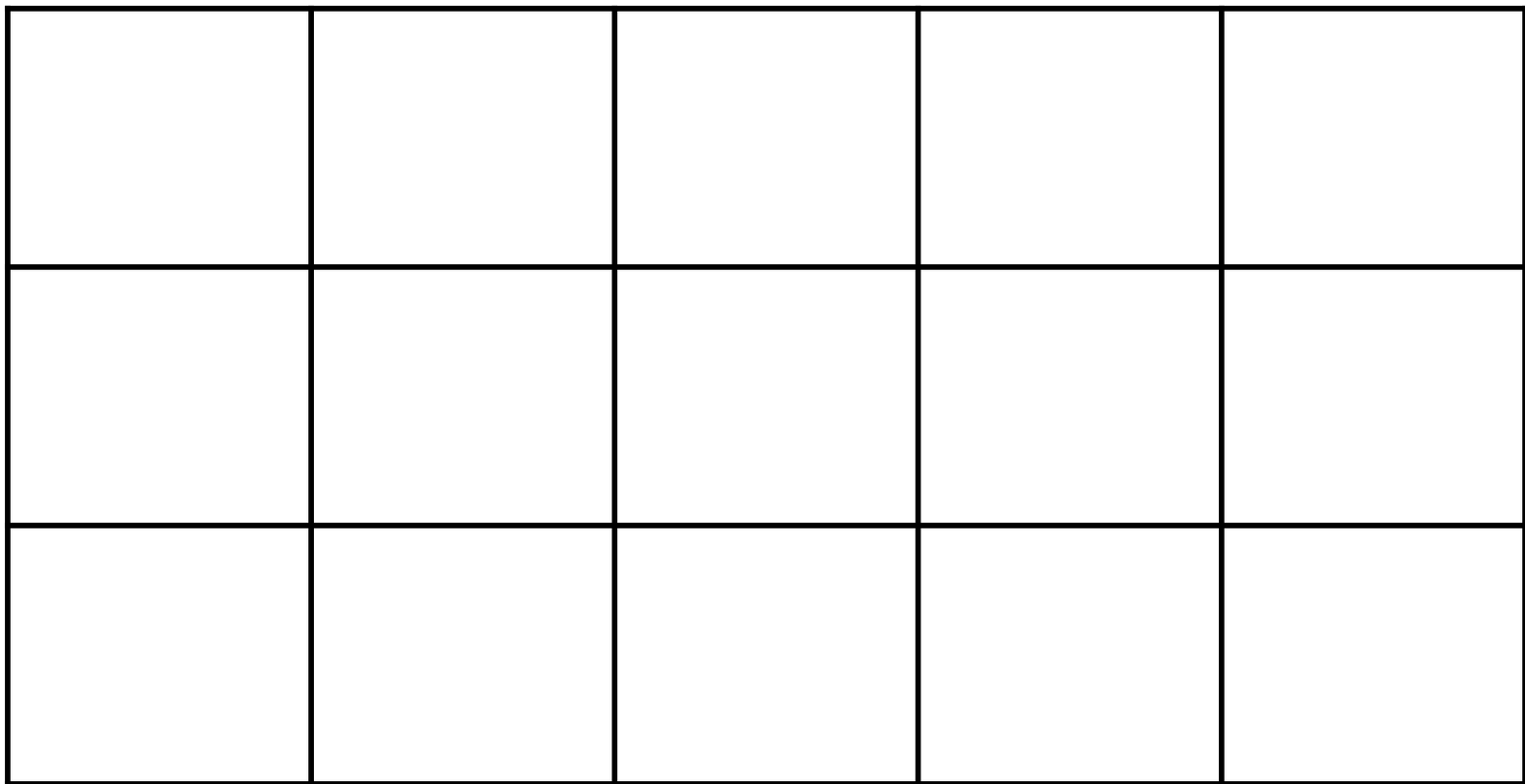


Perimeter and Area

What's the length of the shortest side?

What's the length of the unknown side?

What's the sum of the rectangle's two shortest sides?

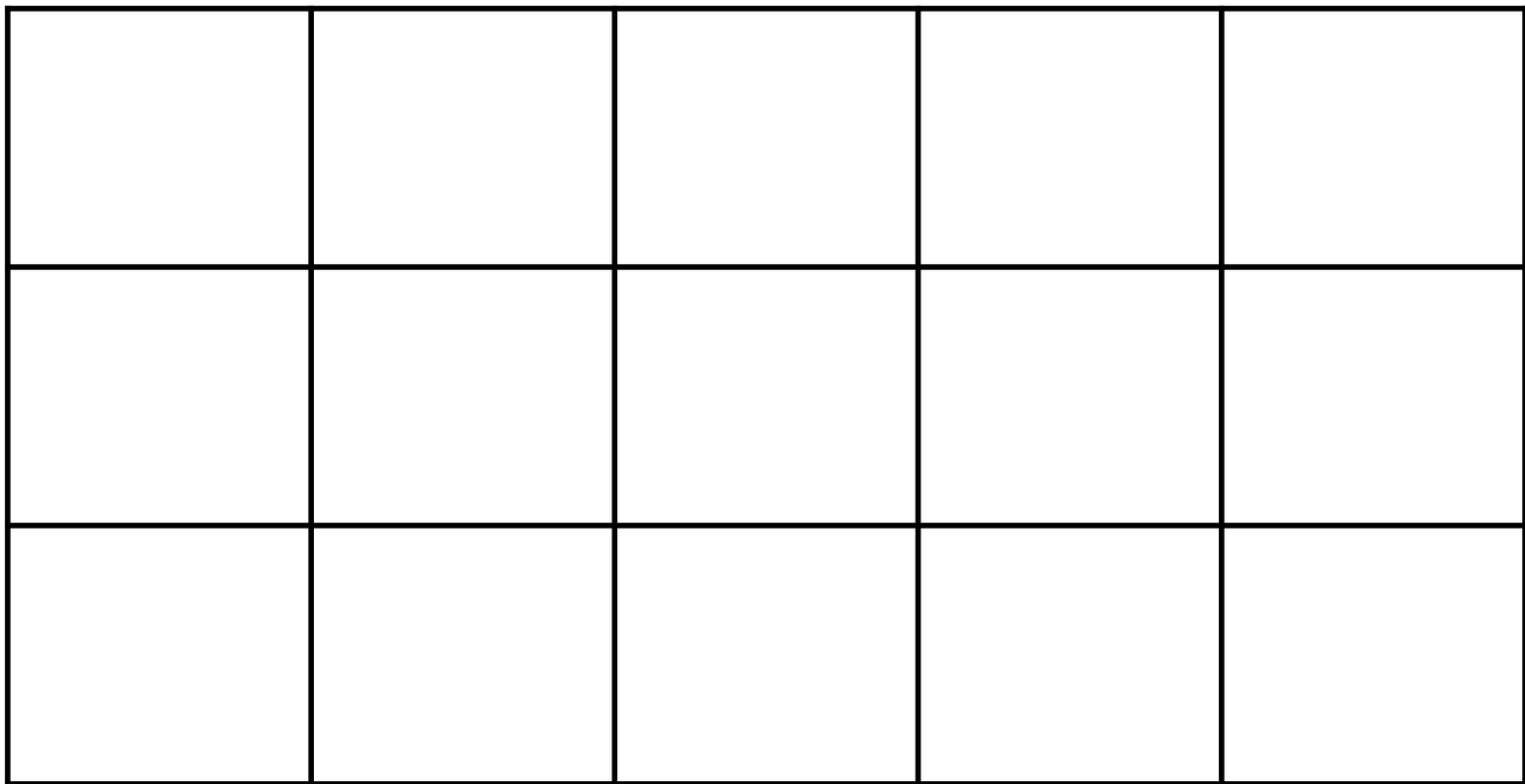


Perimeter and Area

What is the sum of the four sides of the rectangle?

How many square units are in one row?

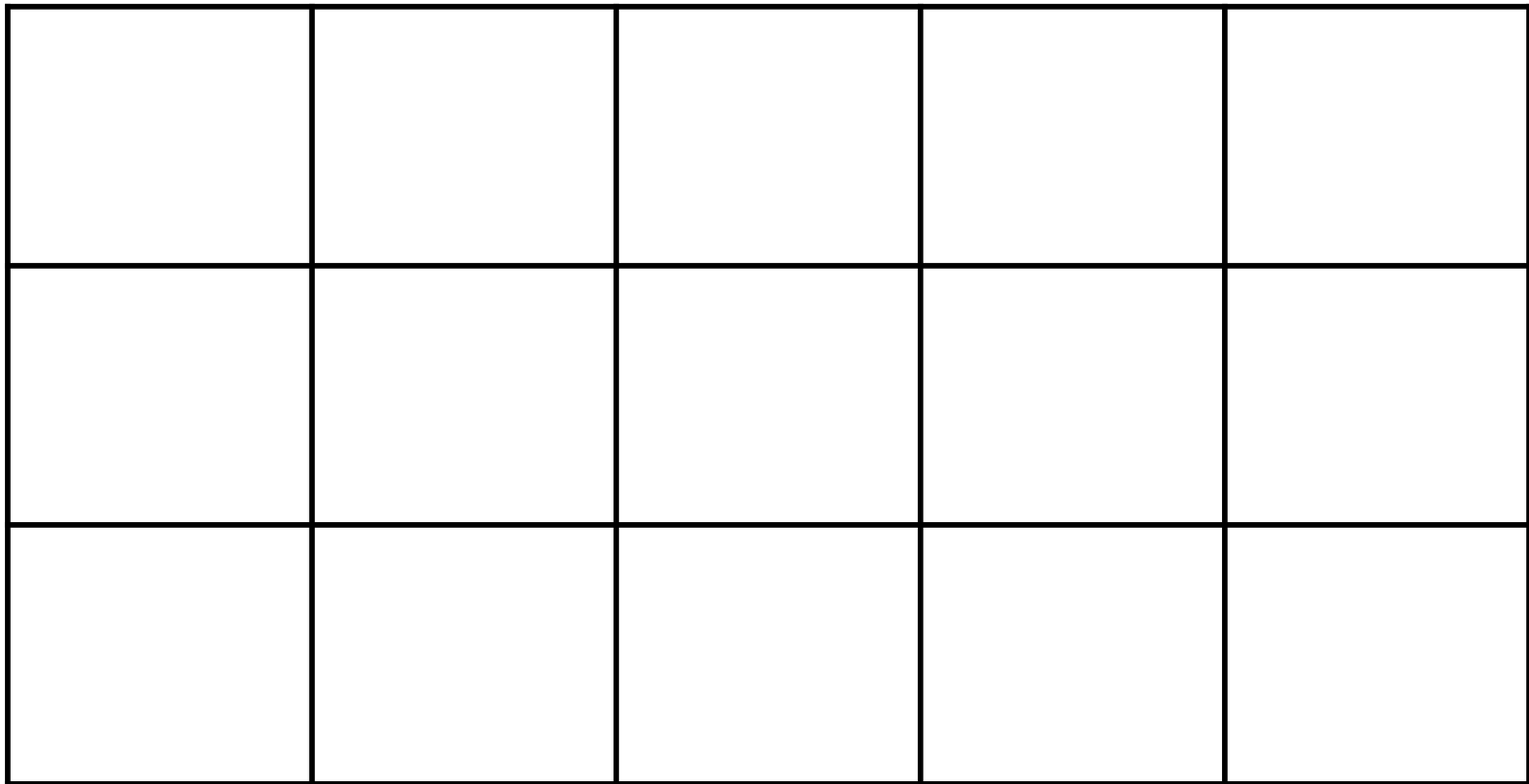
How many rows of 5 square units are there?



Perimeter and Area

Let’s find how many square units are in the rectangle, counting by fives.

How many square units in all?



Perimeter and Area

Add and Subtract Meters and Centimeters

Do as many problems as you can in two minutes.

If you finish early, skip-count by 400 milliliters on the back.

- Stop when you get to 4,000 milliliters.
- Then, go back through each multiple and convert multiples of 1,000 milliliters to whole liters.

Convert Units

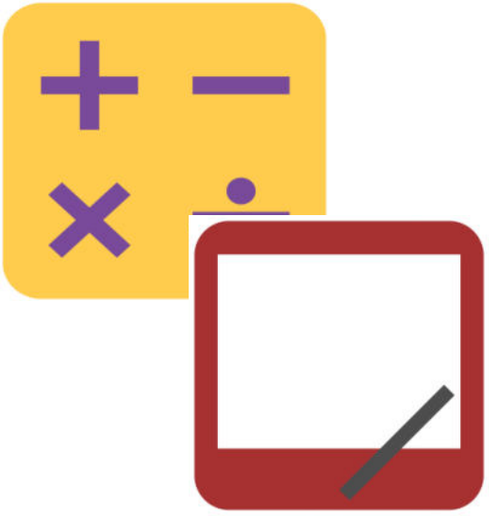
1 m 20 cm = _____ cm

1 m 20 cm is how many centimeters?

1 m 80 cm = _____ cm

1 m 8 cm = _____ cm

2 m 4 cm = _____ cm



Convert Units

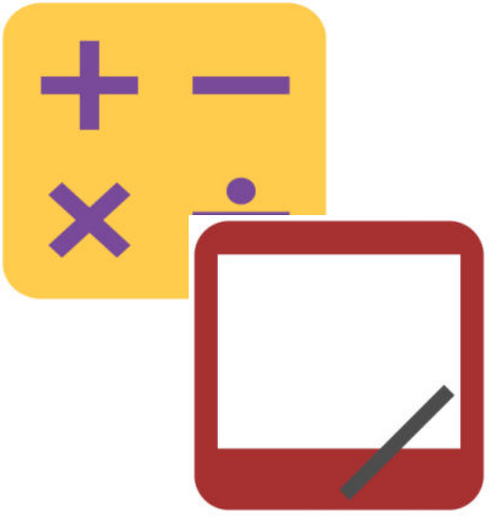
1,500 g = _____ kg _____ g

On your personal whiteboard, fill in the equation.

1,300 g = _____ kg _____ g

1,030 g = _____ kg _____ g

1,005 g = _____ kg _____ g



Convert Units

1liter 700 mL = _____ mL

On your personal whiteboard, fill in the equation.

1liter 70 mL = _____ mL

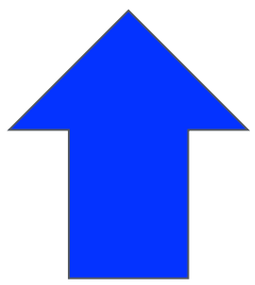
1liter 7 mL = _____ mL

1liter 80 mL = _____ mL

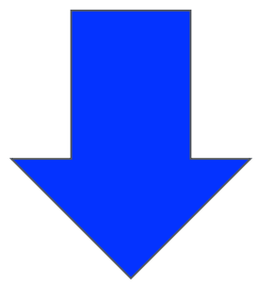
Unit Counting

Count by 500 mL to 3,000 mL.

Say all of the numbers. Watch my fingers to know whether to count up or down. A closed hand means stop.



Count up



Count down

Read Draw Write

Read the problem.

Draw and Label.

Write a number sentence.

Write a word sentence.

Application Problem

Adam poured 1 liter 460 milliliters of water into a beaker. Over three days, some of the water evaporated. On the fourth day, 979 milliliters of water remained in the beaker. How much water evaporated?

Patterns of *times as much*

Turn and tell your neighbor the units for mass, length, and capacity that we have learned so far.

What relationship have you discovered between milliliters and liters?

Patterns of *times as much*

1 L = 1,000 x 1 mL

What do you notice about the relationship between grams and kilograms?

Meters and kilometers?

Write your answers as equations.

Patterns of *times as much*

I wonder if other units have similar relationships. What other units have we discussed in fourth grade so far?

What do you notice about the units of place value?

Are the relationships similar to those of metric units?

Patterns of *times as much*

What unit is 100 times as much as 1 centimeter?

Write your answer as an equation.

Can you think of a place value unit relationship that is similar?

Relate Units

1 m = 100 cm

1 meter is equal to 100 centimeters.

What unit is 100 ones?

I notice 1 kilogram is 1,000 grams and 1 liter is 1,000 milliliters. Did you discover two place value units with a similar relationship?

Relate Units

You can rename 1,200 milliliters as 1 liter 200 milliliters.

How could you break 1,200 into place value units?

Relate Units

You can rename 15,450 milliliters as 15 liters 450 milliliters.

How could you break 15,450 into place value units?

How could you rename 895 cm as place value units?

Compare Metric Units

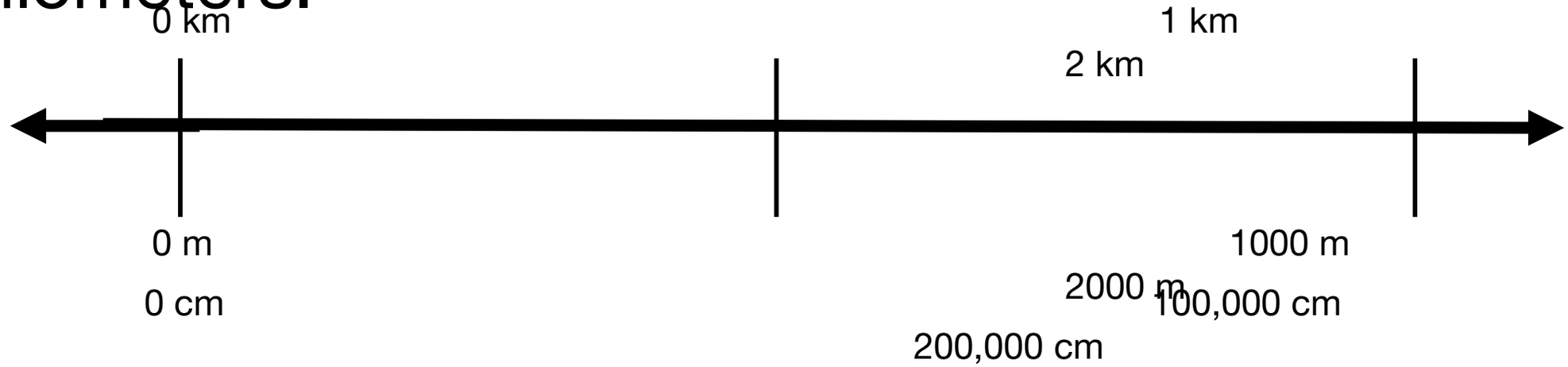
724,706 mL _____ 72 L 760 mL

Which is more?

Tell your partner how you can use place value knowledge to compare.

Compare Metric Units

Draw a number line from 0 kilometers to 2 kilometers.



1 kilometer is how many meters?

2 kilometers is equal to how many meters?

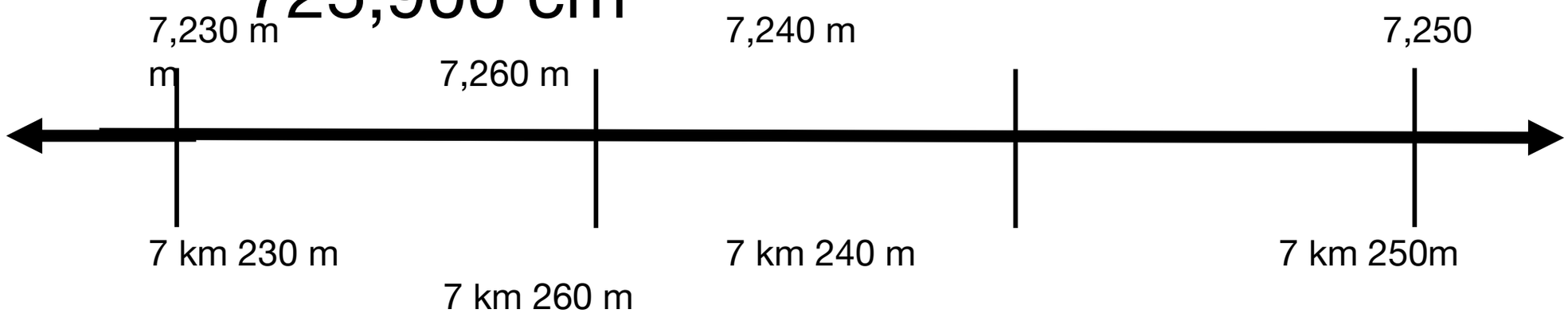
Discuss with your partner, how many centimeters are equal to 1 kilometer?

Compare Metric Units

7,256 m

7 km 246 m

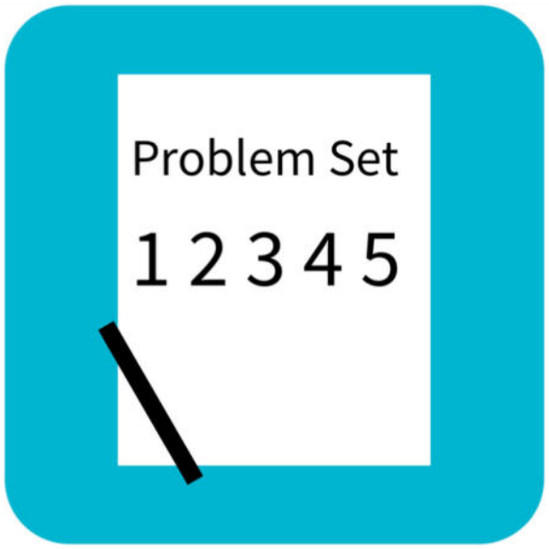
725,900 cm



Work with your partner to place these measurements on a number line.

Explain how you know where they are to be placed.

Order the measurements from least to greatest.



Problem Set

Name _____ Date _____

1. Complete the table.

Smaller Unit	Larger Unit	How Many Times as Large as?
one	hundred	100
centimeter		100
one	thousand	1,000
gram		1,000

Debrief

Participate in the discussion by...

- Thinking about the question.
- Sharing your work.
- Explaining your strategy.
- Listening to others.

Debrief

Do you find the number line helpful when comparing measures? Why or why not?

How are metric units and place value units similar?

Do money units relate to place value units similarly?

Time units?

How did the previous lessons on conversions prepare you for today’s lesson?

Exit Ticket

Name _____ Date _____

1. Fill in the unknown unit in word form.

   a. 8,135 is 8 _____ 135 ones.

   b. 8,135 kg is 8 _____ 135 g.

2. _____ mL is equal to 342 L 645 mL.

3. Compare using >, <, or =.

   a. 23 km 40 m ◯ 2,340 m