Eureka Math

4th Grade Module 2 Lesson 3

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.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Scaffold constructed responses with sentence frames, such as, "The Lee family drank ____ of water." Or, have students dictate their responses to a partner. Provide sheets with pre-formatted tape diagrams that can be slipped inside personal white boards, or use virtual manipulatives as an alternative.

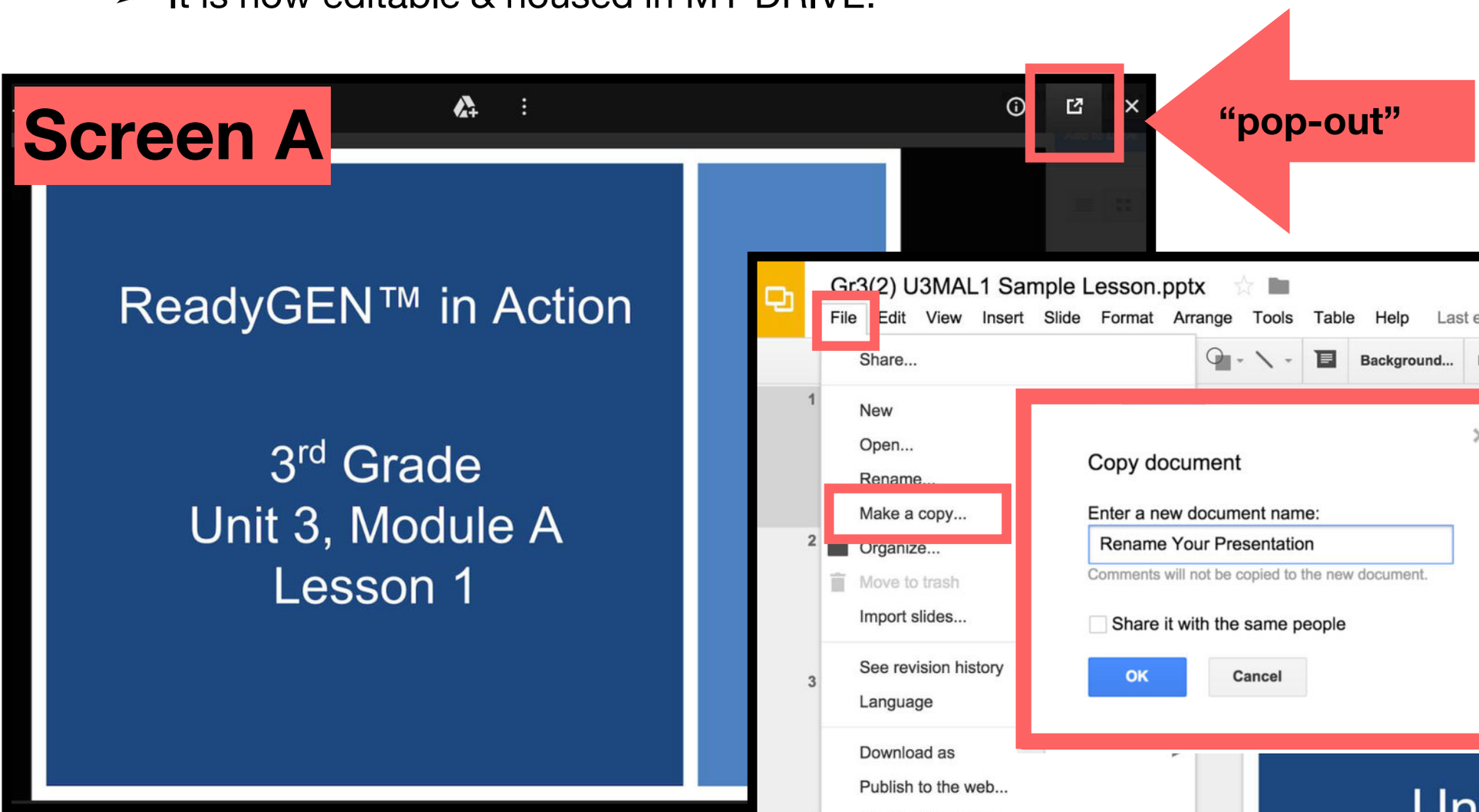
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

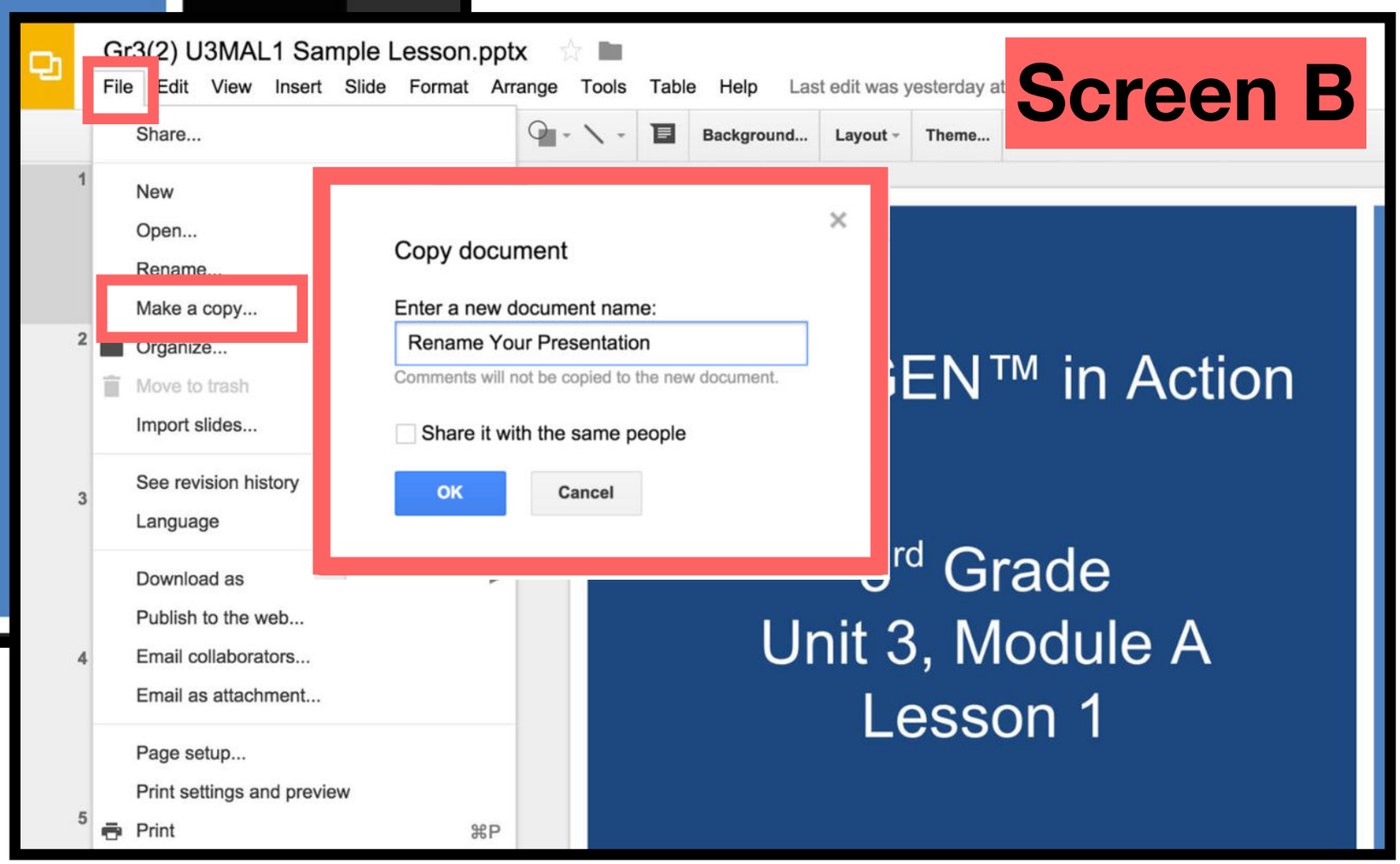
Directions for customizing presentations are available on the next slide.

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.



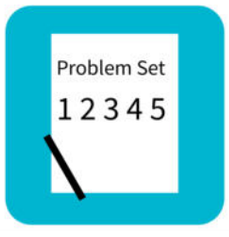


Icons

Read, Draw, Write

Learning Target

Personal White Board

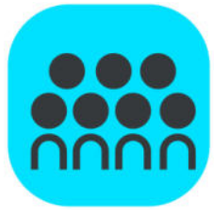


Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

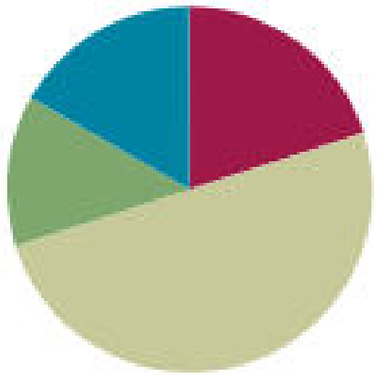
Small Group Time

Lesson 3

Objective: Express metric capacity measurements in terms of a smaller unit; model and solve addition and subtraction word problems involving metric capacity.

Suggested Lesson Structure

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



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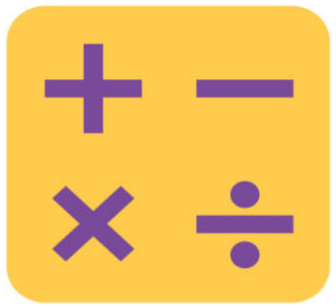


Convert Units

1 m = _____ cm

1 meter is how many centimeters?

4 m = _____ cm

4 m 50 cm = _____ cm

8 m 5 cm = _____ cm

6 m 35 cm = _____ cm

Convert Units

1,000 m = _____ km

1,000 meters is the same as how many kilometers?

2,000 m = _____ km

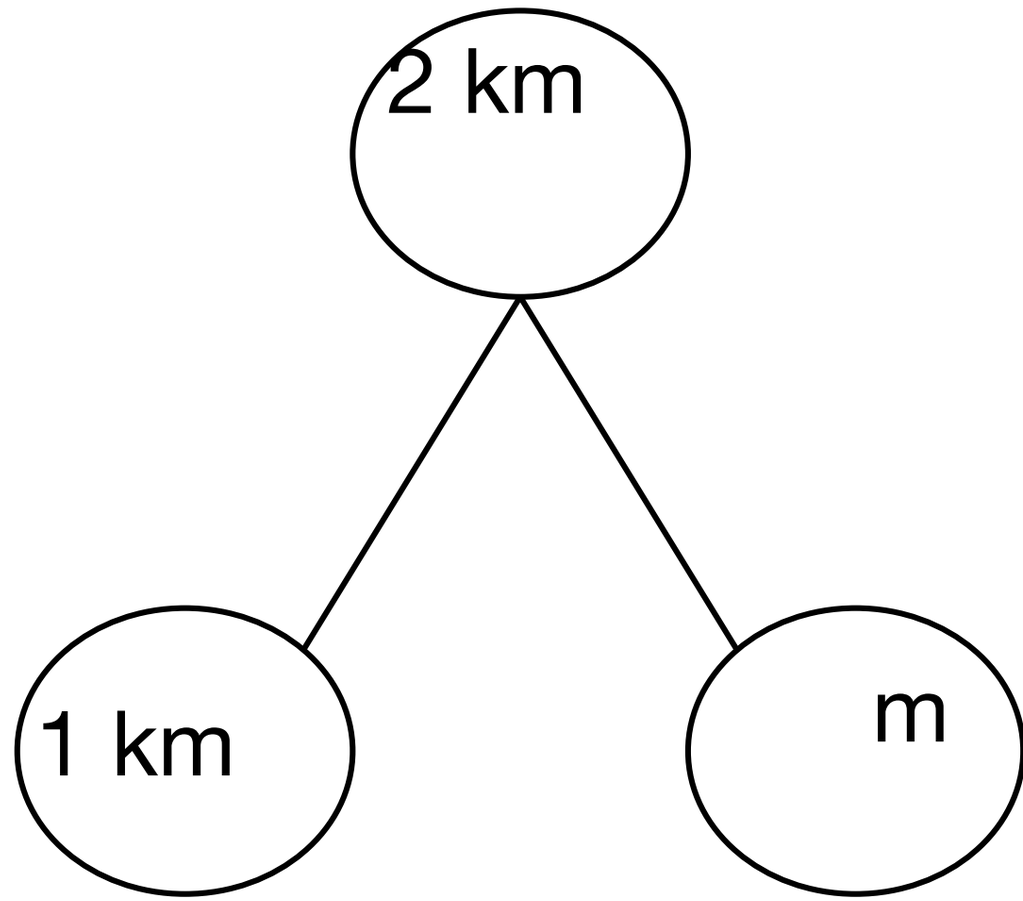
3,000 m = _____ km

6,000 m = _____ km

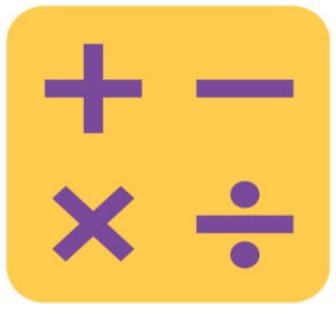
9,000 m = _____ km

Convert Units

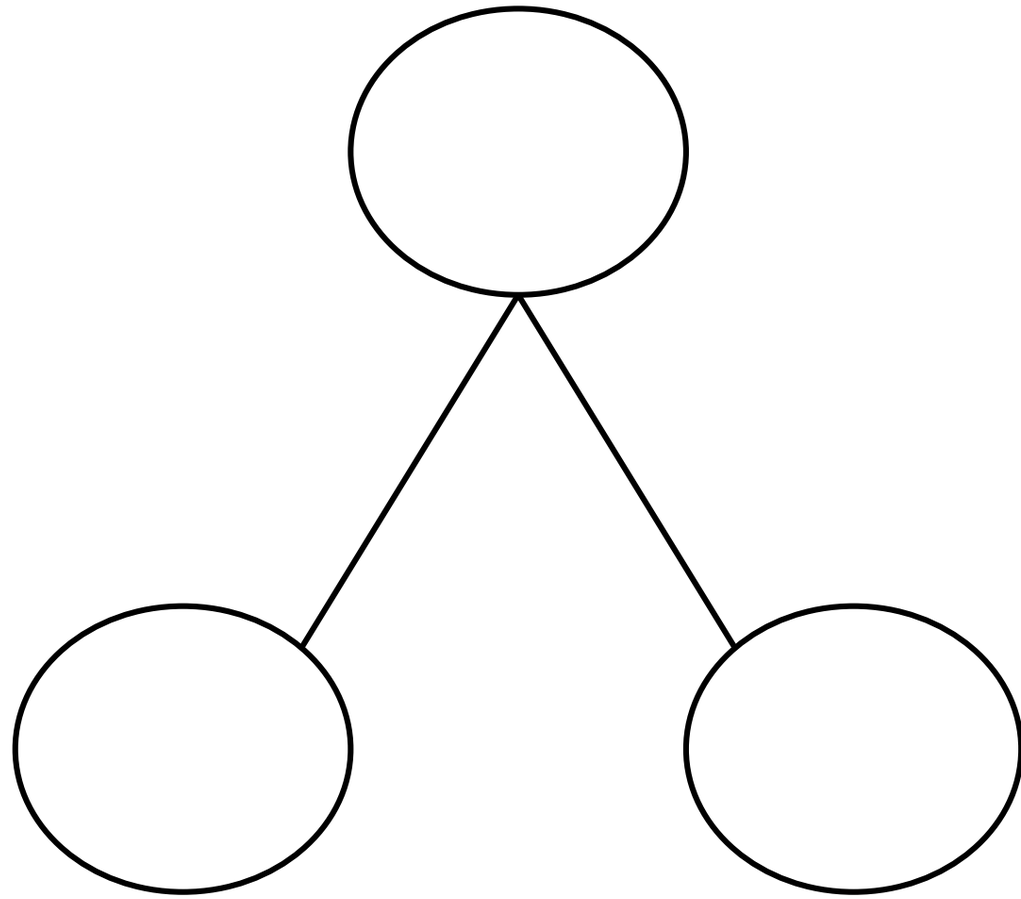
Fill in the unknown part.



Write the whole as an addition sentence with mixed units.



Convert Units



Unit Counting

Count by 500 g to 3,000 g.

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

Add and Subtract Meters and Centimeters

560 cm + 230 cm = _____.

___ m ___ cm + ___ m ___ cm = ___ m ___ cm

Complete the two addition sentences.

Add and Subtract Meters and Centimeters

650 cm - 230 cm = _____.

___ m ___ cm - ___ m ___ cm = ___ m ___ cm

Complete the two subtraction sentences.

Add and Subtract Meters and Centimeters

470 cm + 520 cm = _____.

___ m ___ cm - ___ m ___ cm = ___ m ___ cm

Complete the two addition sentences.

Read Draw Write

Read the problem.

Draw and Label.

Write a number sentence.

Write a word sentence.

Application Problem

A liter of water weighs 1 kilogram. The Lee family took 3 liters of water with them on a hike. At the end of the hike, they had 290 grams of water left. How much water did they drink? Draw a tape diagram, and solve using an algorithm or a simplifying strategy.

RDW

Compare Liters and Milliliters

Point to the mark on your beaker that says 1 liter.

Pour water into your beaker until you reach that amount.

Now, how many **milliliters** are in your beaker?

How do you know?

Compare Liters and Milliliters

1 L = 1,000 mL

With your partner, locate 1,500 mL and pour in more water to measure 1,500 mL.

Now how many liters do you have?

Just like we named mixed units of kilograms and grams in the last lesson, we can use mixed units of liters and milliliters by using both sides of the scale on the beaker.

Compare Liters and Milliliters

1 L 500 mL = 1,500 mL

Pour water to measure 2 liters.

How many milliliters are equal to 2 liters?

Pour more water to measure 2,200 mL.

Discuss the capacity of the beaker.

Compare Liters and Milliliters

Activity: Prepare several beakers with different amounts of water in the beaker, for example, 1 liter, 1,400 mL, 1,750 mL, 2 L, and 2,300 mL. Have students circulate to each beaker, recording the amount of water as mixed units of liters and milliliters and as milliliters. Compare answers as a class and record findings on the board to show equivalency between mixed units of liters and milliliters, and milliliters.

Add Mixed Units of Capacity

32 L 420 mL + 13 L 585 mL

Will you use a simplifying strategy or an algorithm?

Choose the way you want to do it. You will have 2 minutes. If you finish before the two minutes are up, try solving it a different way.

What strategies can we use to solve?

Subtract Mixed Units of Capacity

12 L 215 mL - 8 L 600 mL

Simplifying strategy or algorithm? Discuss with a partner.

Choose the way you want to do it. You will have 2 minutes. If you finish before time is up, try solving it a different way.

Take a moment to review the solution strategies on the board. Compare the counting up strategies, the number line, and the arrow way.

Solve a Word Problem Involving Mixed Units

Jennifer is making 2,170 milliliters of her favorite drink that combines iced tea and lemonade. If she puts in 1 liter 300 milliliters of iced tea, how much lemonade does she need?

Take 2 minutes to draw and label a tape diagram.

Tell your partner the known and unknown information.

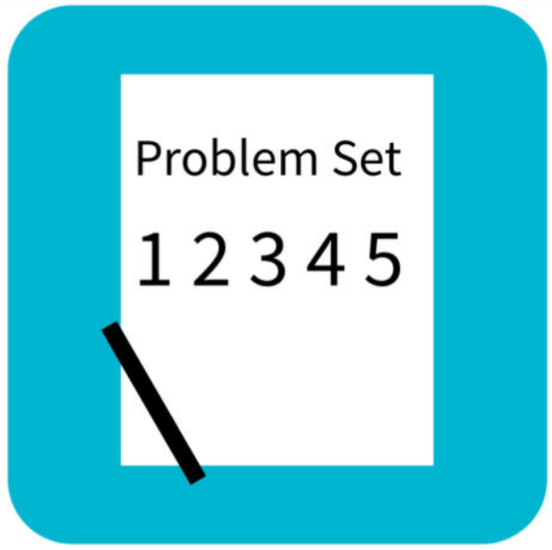
Solve a Word Problem Involving Mixed Units

Jennifer is making 2,170 milliliters of her favorite drink that combines iced tea and lemonade. If she puts in 1 liter 300 milliliters of iced tea, how much lemonade does she need?

Work with your partner to solve. Will you use a simplifying strategy or an algorithm?

Label the known part on your tape diagram, and make a statement of the solution.

Check your work by using the subtraction algorithm.



Problem Set

Name _____ Date _____

1. Complete the conversion table.

Liquid Capacity	
L	**mL**
1	1,000
5	
38	
	49,000
54	
	92,000

2. Convert the measurements.

a. 2 L 500 mL = _____ mL

b. 70 L 850 mL = _____ mL

c. 33 L 15 mL = _____ mL

d. 2 L 8 mL = _____ mL

e. 3,812 mL = _____ L _____ mL

f. 86,003 mL = _____ L _____ mL

Debrief

Participate in the discussion by...

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

Debrief

What patterns have you noticed about the vocabulary used to measure length, mass, and capacity?

Describe the relationship between liters and **milliliters**.

How did today's lesson relate to the lessons on mass and length?

Review the new vocabulary presented in the lesson:

- milliliters

Exit Ticket

Name _____ Date _____

1. Convert the measurements.

   a. 6 L 127 mL = _____ mL

   b. 706 L 220 mL = _____ mL

   c. 12 L 9 mL = _____mL

   d. _____ L _____ mL = 906,010 mL

2. Solve.

   81 L 603 mL − 22 L 489 mL