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 2

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Use color to customize the presentation of the Convert Units activity. Enhance learners' perception of the information by consistently displaying meters in one color (e.g., red), while displaying centimeters in a different color (e.g., green). In addition, use color to distinguish the two parts of the number bond.

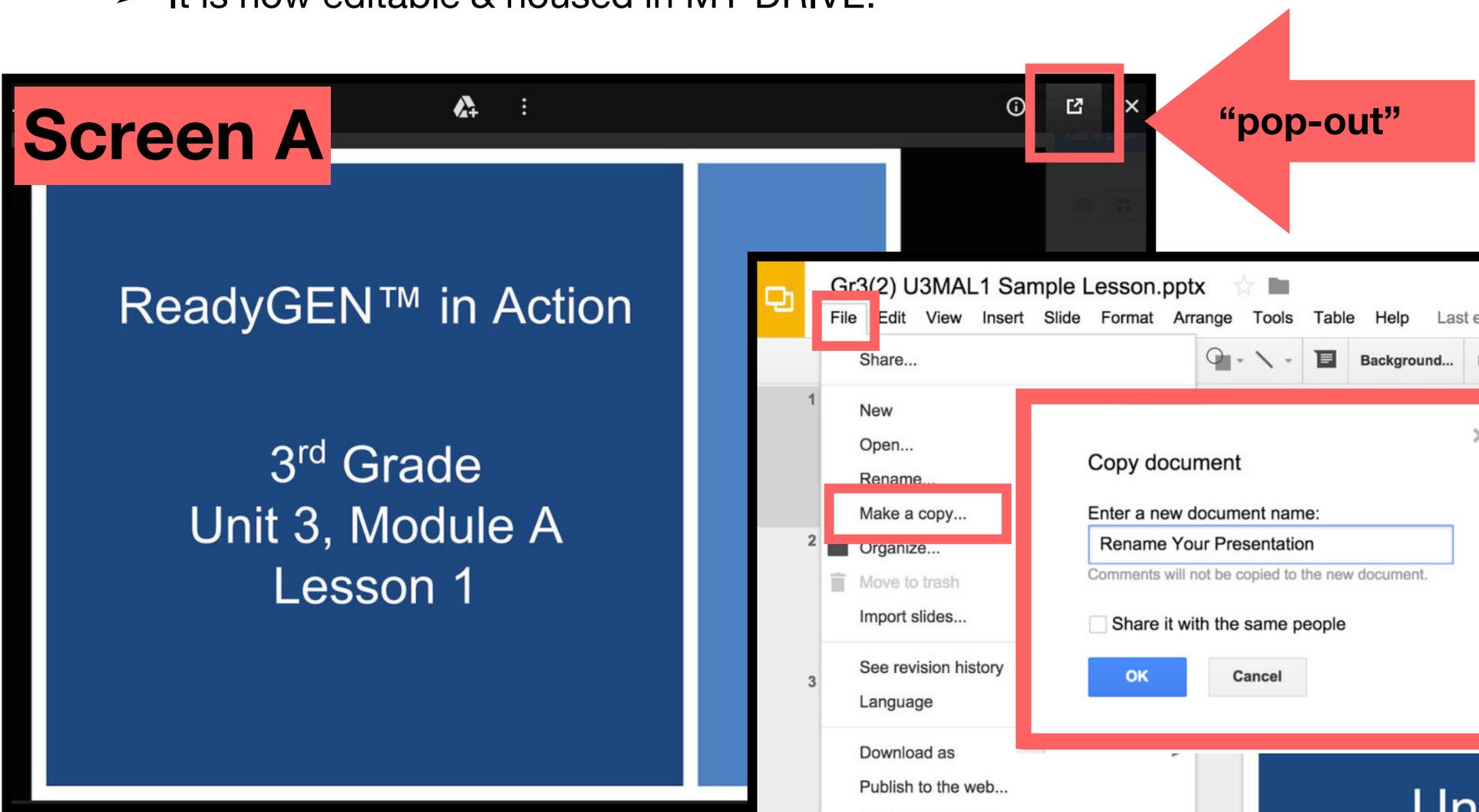
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

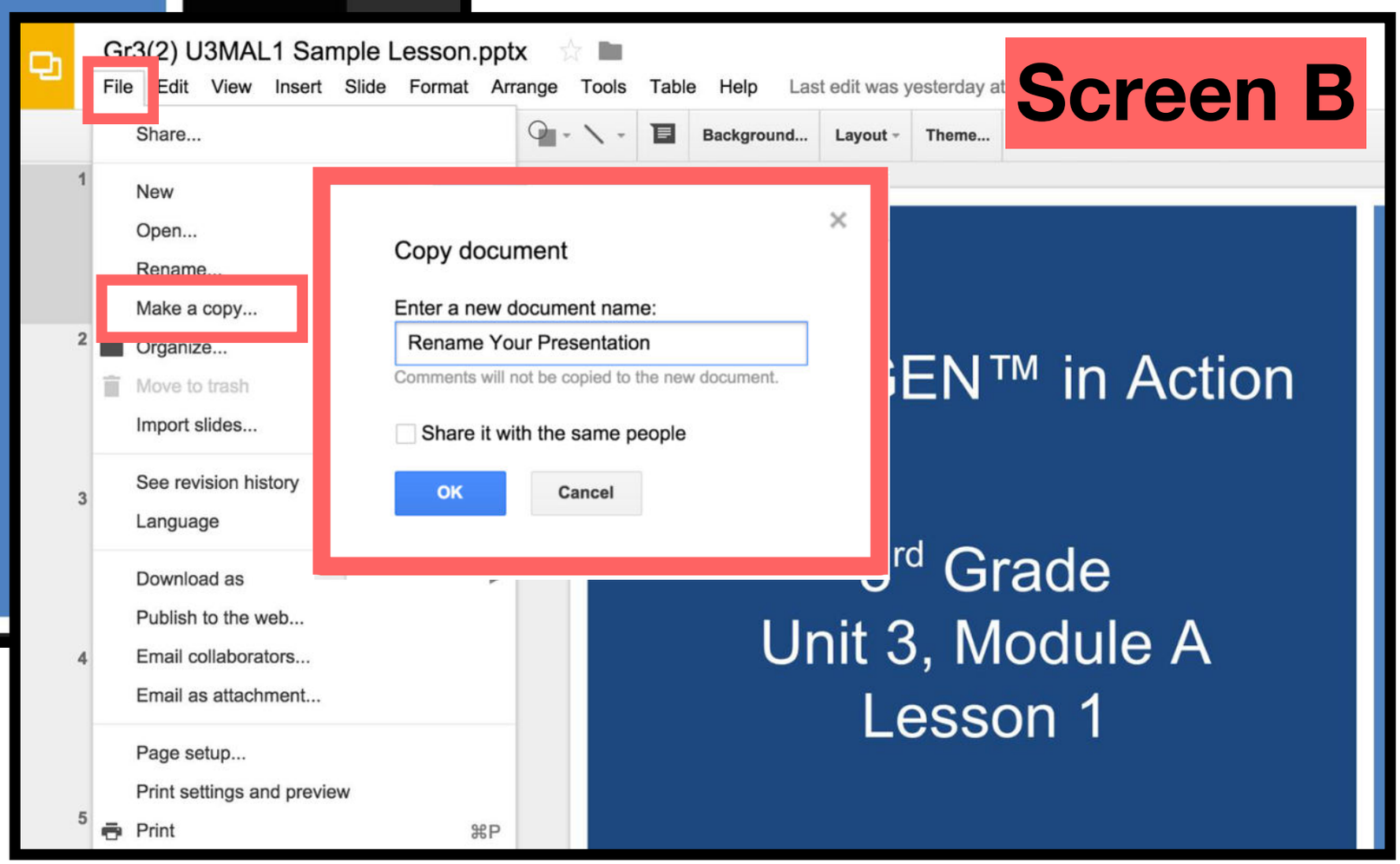
Directions for customizing presentations are available on the next slide.

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.



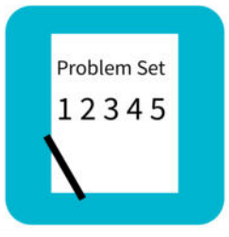


Icons

Read, Draw, Write

Learning Target

Personal White Board

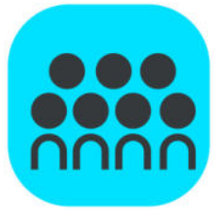


Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

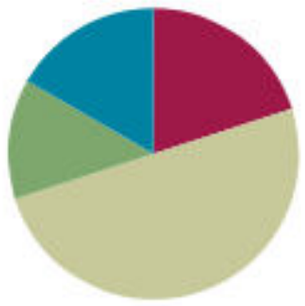
Small Group Time

Lesson 2

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

Suggested Lesson Structure

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



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**.

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

Convert Units

1 m = _____ cm

2 m = _____ cm

3 m = _____ cm

9 m = _____ cm

6 m = _____ cm

Convert Units

1,000 g = _____ kg

1,000 grams is the same as how many kilograms?

2,000 g = _____ kg

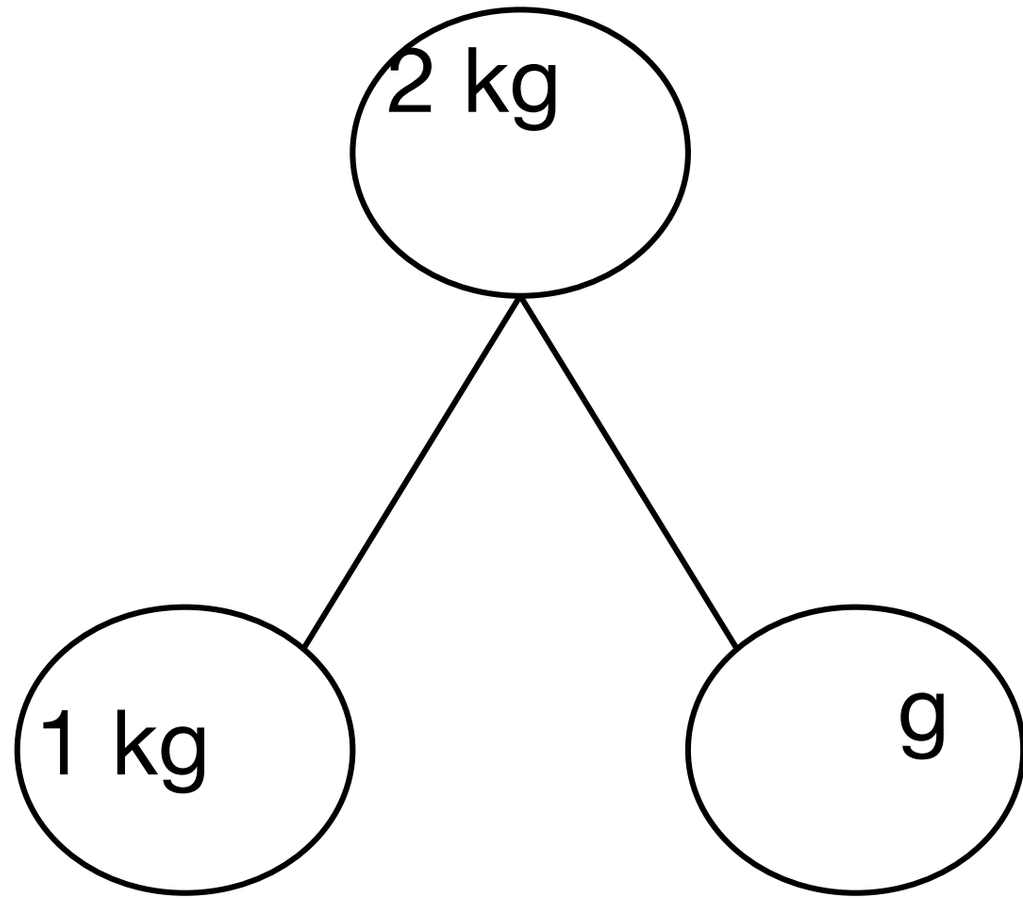
3,000 g = _____ kg

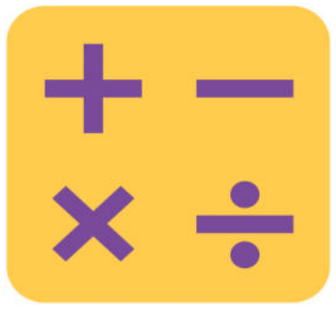
7,000 g = _____ kg

5,000 g = _____ kg

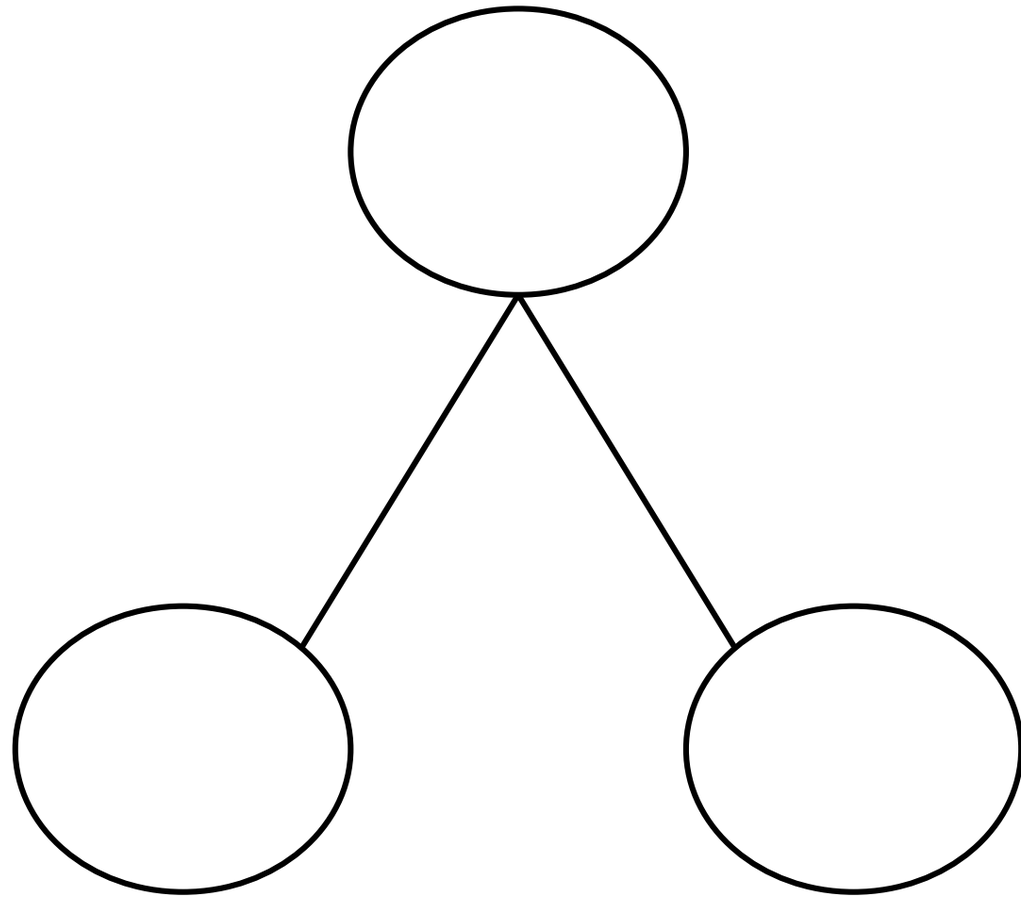
Convert Units

Fill in the unknown part.





Convert Units



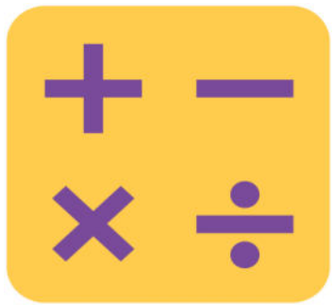
Group Counting

Count by 50 cm to 300 cm.

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

540 cm + 320 cm = _____.

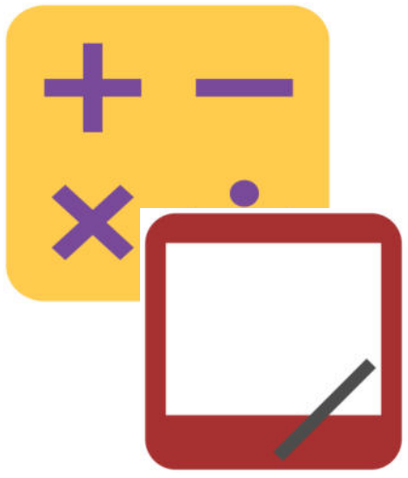
Say 540 centimeters in meters and centimeters.

Say 320 centimeters in meters and centimeters.

Add the meters.

Add the centimeters.

Say the addition sentence in centimeters.



Add and Subtract Meters and Centimeters

420 cm + 350 cm = _____.

On your whiteboard, write 420 cm + 350 cm by representing each number of centimeters as meters and centimeters, and then combining meters and centimeters.

Read Draw Write

Read the problem.

Draw and Label.

Write a number sentence.

Write a word sentence.

Application Problem

The distance from school to Zoie's house is 3 kilometers 469 meters. Camie's house is 4 kilometers 301 meters farther away from Zoie's. How far is it from Camie's house to school? Solve using an algorithm or a simplifying strategy.

Convert kg to g

Weight

Mass

This bottle of water weighs 1 kilogram. We can also say it has a **mass** of 1 kilogram. This is what a scientist would say.

This dictionary weighs about 1 kilogram.

The mass of this small paperclip is about 1 gram. A dollar bill weighs about 1 gram, too.

Convert kg to g

1 kilogram = 1,000 grams

If the mass of this dictionary is about 1 kilogram, about how many small paper clips will be as heavy as this dictionary?

Let’s use a chart to show the relationship between kilograms and grams.

Convert kg to g

We know that 1 kilogram equals 1,000 grams.

How many grams are in 2 kilograms?

How many kilograms are in 3,000 grams?

Compare kilograms and grams.

Mass	
kg	g
1	1,000
2	
	3,000
4	
	5,000
	6,000
7	
8	
	9,000
10	

Convert kg to g

1 kg 500 g = _____ g

Let’s convert 1 kg 500 g to grams. 1 kilogram is equal to how many grams?

1,000 grams plus 500 grams is 1,500 grams.

1 kg 300 g is equal to how many grams?

5 kg 30 g is equal to how many grams?

Convert kg to g

2, 500 grams is equal to how many kilograms?

5, 005 g is equal to how many kilograms?

Add Mixed Units of Mass

8 kg + 8,200 g

Talk for one minute with your partner about how to solve this problem.

Are you going to use the algorithm or a simplifying strategy?

Why?

Add Mixed Units of Mass

25 kg 537 g + 5 kg 723 g

A simplifying strategy or the algorithm? Discuss with your partner.

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.

Subtract Mixed Units of Mass

10 kg - 2 kg 250 g

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.

Subtract Mixed Units of Mass

32 kg 205 g - 5 kg 316 g

Simplifying strategy or algorithm? Discuss with a partner.

Choose the way you want to do it and solve.

Solve a Word Problem Involving Mixed Units

A suitcase cannot weigh more than 23 kilograms for a flight. Robert packed his suitcase for his flight, and it weighs 18 kilograms 705 grams. How many more grams can he add to his suitcase without going over the weight limit?

Take 1 minute to draw and label a tape diagram.

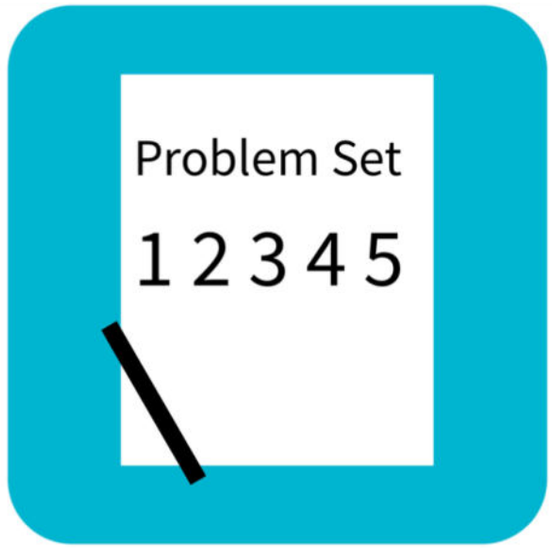
Tell your partner the known and unknown information.

Solve a Word Problem Involving Mixed Units

A suitcase cannot weigh more than 23 kilograms for a flight. Robert packed his suitcase for his flight, and it weighs 18 kilograms 705 grams. How many more grams can he add to his suitcase without going over the weight limit?

Will you use the algorithm or a simplifying strategy?

Label the missing part on your diagram and make a statement of the solution.



Problem Set

Name _____ Date _____

1. Complete the conversion table.

Mass	
kg	g
1	1,000
3	
	4,000
17	
	20,000
300	

2. Convert the measurements.

a. 1 kg 500 g = _____ g

b. 3 kg 715 g = _____ g

c. 17 kg 84 g = _____ g

d. 25 kg 9 g = _____ g

e. _____ kg _____ g = 7,481 g

f. 210 kg 90 g = _____ g

3. Solve.

a. 3,715 g − 1,500 g

b. 1 kg − 237 g

Debrief

Participate in the discussion by...

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

Debrief

How did the Application Problem connect to today's lesson?

How did today's lesson of weight conversions build on yesterday's less of length conversions?

When might we use grams rather than kilograms?

Review the new vocabulary presented in the lesson:

- mass

Exit Ticket

Name _____ Date _____

1. Convert the measurements.

   a. 21 kg 415 g = _____ g

   b. 2 kg 91 g = _____ g

   c. 87 kg 17 g = _____ g

   d. _____ kg _____ g = 96,020 g

Use a tape diagram to model the following problem. Solve using a simplifying strategy or an algorithm, and write your answer as a statement.

2. The table to the right shows the weight of three dogs. How much more does the Great Dane weigh than the Chihuahua?

Dog	Weight
Great Dane	59 kg
Golden Retriever	32 kg 48 g
Chihuahua	1,329 g