TIPS FOR FAMILIES

KEY CONCEPT OVERVIEW

Module 2 focuses on length, mass, and capacity in the metric system. In Lessons 1 through 3, students express larger **metric units** in terms of smaller metric units (e.g., 1 km = 1,000 m).

You can expect to see homework that asks your child to do the following:

- **Convert** from larger units to smaller units (find equivalent measures).
- Add and subtract amounts expressed in **mixed units** (for example, **kilometers** and **meters**) using a **simplifying strategy** or **algorithm** (an example of each is shown in the sample problem below).
- Solve word problems using **strip diagrams** as models.

SAMPLE PROBLEM *(From Lesson 1)*

Solve using an algorithm or a simplifying strategy.

54 m 18 cm – 9 m 63 cm

Sample Response (Algorithm):

	4	13		0	11		
	5	3	m	1	1	8	cm
–		9	m		6	3	cm
	4	4	m		5	5	cm

First, 54 m 18 cm is renamed as 53 m 118 cm so that the subtraction of 63 cm is possible. Then students subtract as they would with any whole number, regouping as necessary.

Sample Response (Simplifying Strategy):

37 cm + 44 m + 18 cm = 44 m 55 cm

This counting on strategy is very similar to making change with money. Students count on from the smaller amount (9 m 63 cm) to reach the larger amount (54 m 18 cm.) 37 cm is added to 9 m 63 cm in order to reach the next whole number of meters (10 m). Students then count on with meters to reach 54 m then add the centimeters to reach 54 cm 18 cm.

HOW YOU CAN HELP AT HOME

- Pose questions such as, "Would we measure the distance from here to the store with centimeters, meters, or kilometers?" or "Would we measure a person's mass in grams or kilograms?" "Would we measure the capacity of a coffee cup in milliliters or liters?" Ask your child to justify her answers.

- Practice metric conversions from a larger unit to a smaller unit. Use the units of kilometer, meter, centimeter, kilogram, gram, liter, and milliliter (e.g., 3 m =___ cm). Make a game with index cards, sticky notes or small pieces of paper. Write one measurement on each card (e.g., write "3 m" on one card and "300 cm" on another card). Use the cards to play a variation of Memory or Go Fish. The objective is to make matches of equivalent measures.
- Continue to encourage your child to practice skip-counting, forward and backward, by threes, fours, sixes, sevens, eights, and nines (e.g., 0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 36, 32, 28, 24, 20, 16, 12, 8, 4, 0). As your child is successful, raise the level of difficulty. Challenge him to start at a number other than 0 (e.g., 18, 21, 24, 27, 30, 27, 24, …).

TERMS

Algorithm: A step-by-step procedure to solve a particular type of problem (e.g., the process of subtracting vertically with regrouping).

Capacity: The amount that something can hold, usually measured in units of liquid volume.

Convert: To express a measurement in a different unit (e.g., liters expressed as milliliters).

Metric units: Units used in the metric system (e.g., centimeter, meter, kilometer, gram, kilogram, milliliter, and liter).

Centimeter (cm): Unit of measure for length.

Meter (m): Unit of measure for length.

Kilometer (km): Unit of measure for length.

Gram (g): Unit of measure for mass.

Kilogram (kg): Unit of measure for mass.

Milliliter (mL): Unit of measure for liquid volume.

Liter (L): Unit of measure for liquid volume.

Metric Conversions	
1 kg	1,000 g
1 L	1,000 mL
1 km	1,000 m
1 m	100 cm

Mixed units: Expressing a number in terms of more than one unit (e.g., 2 tens 4 ones or 2 meters 34 centimeters).

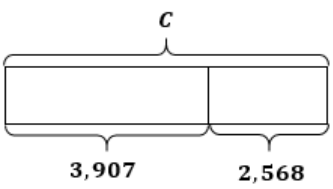
Simplifying strategy: A mental math or recorded method for making a problem easier to solve (e.g., adding to the next unit or using a number bond).

MODELS

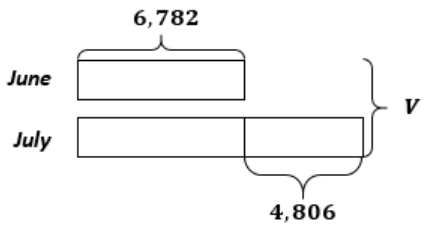
Conversion Table

Mass	
kg	g
3	
5	
	7,000

Strip Diagram



Strip Diagram



TIPS FOR FAMILIES

KEY CONCEPT OVERVIEW

In Lessons 4 and 5, students relate what they know about place value units as they **convert**, compare, place metric measurements on a **number line**, and solve word problems.

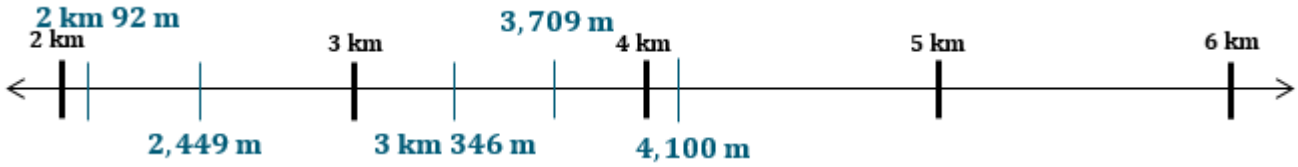
You can expect to see homework that asks your child to do the following:

- Convert **metric units** (e.g., 3 km 156 m is equal to 3,156 m).
- Compare measurements expressed in metric units (e.g., 6,225 m > 5 km 226 m).
- Place measurements on a number line (see sample problem below).
- Use a **strip diagram** to model word problems, and solve word problems involving length, mass, and capacity.

SAMPLE PROBLEM *(From Lesson 4)*

Place the following measurements on the number line.

3 km 346 m 4,100 m 2 km 92 m 3,709 m 2,449 m



HOW YOU CAN HELP AT HOME

- Together with your child, look through your kitchen cupboards. Take out several cans of food. Look at the labels to see if you can find any metric units, such as grams, that are comparable. Use the measurements to line the cans up from least to greatest. Draw a number line and then plot and label the measurements.
- Ask your child to create a word problem using the measurements from several cans of food. For example, "Susie had a can of corn, a can of potatoes, and a can of soup. The can of corn had a mass of 418 grams and the can of potatoes had a mass of 425 grams. The total mass of all three cans was 1,151 grams. What was the mass of the can of soup?" Together, draw a strip diagram to model the problem. Solve.

TERMS

Convert: To express a measurement in a different unit (e.g., liters expressed as milliliters).

Metric units: Units used in the metric system. Centimeter, meter, kilometer, gram, kilogram, milliliter, and liter are all examples of metric units.

Centimeter (cm): Unit of measure for length.

Meter (m): Unit of measure for length.

Kilometer (km): Unit of measure for length.

Gram (g): Unit of measure for mass.

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Metric Conversions	
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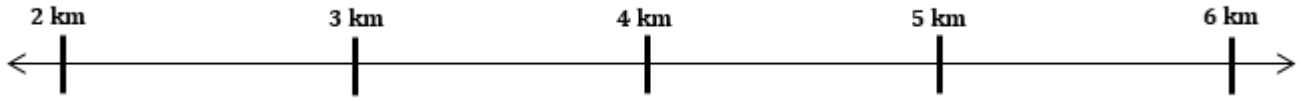
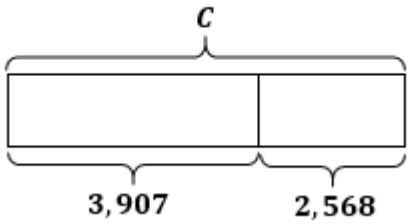
1 km	1,000 m
1 m	100 cm

MODELS

Number Line



Strip Diagram



Strip Diagram