

## 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 **tape diagrams** as models.

## SAMPLE PROBLEM (From Lesson 1)

Solve using an algorithm or a simplifying strategy.

$$54 \text{ m } 18 \text{ cm} - 9 \text{ m } 63 \text{ cm}$$

Sample Response (Algorithm):

$$\begin{array}{r}
 4 \ 13 \quad 0 \ 11 \\
 5 \ 3 \ \text{m} \ 1 \ 1 \ 8 \ \text{cm} \\
 - \quad 9 \ \text{m} \quad 6 \ 3 \ \text{cm} \\
 \hline
 4 \ 4 \ \text{m} \quad 5 \ 5 \ \text{cm}
 \end{array}$$

Sample Response (Simplifying Strategy):

$$\begin{array}{l}
 \textcircled{+ 37 \text{ cm}} \quad \textcircled{+ 44 \text{ m}} \quad \textcircled{+ 18 \text{ cm}} \\
 9 \text{ m } 63 \text{ cm} \rightarrow 10 \text{ m} \rightarrow 54 \text{ m} \rightarrow 54 \text{ m } 18 \text{ cm} \\
 37 \text{ cm} + 44 \text{ m} + 18 \text{ cm} = 44 \text{ m } 55 \text{ cm}
 \end{array}$$

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at [GreatMinds.org](http://GreatMinds.org).

## 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?” 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. 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, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 27, 24, 21, 18, 15, 12, 9, 6, 3, 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).

**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.

**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).

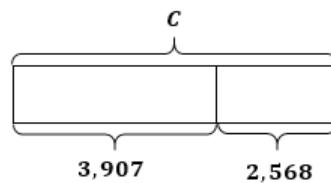
Metric Conversions	
1 kg	1,000 g
1 L	1,000 mL
1 km	1,000 m
1 m	100 cm

**MODELS**

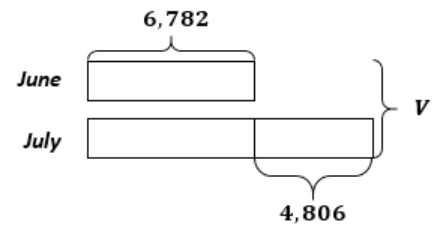
**Conversion Table**

Mass	
kg	g
3	
5	
	7,000

**Tape Diagram**



**Tape Diagram**



## KEY CONCEPT OVERVIEW

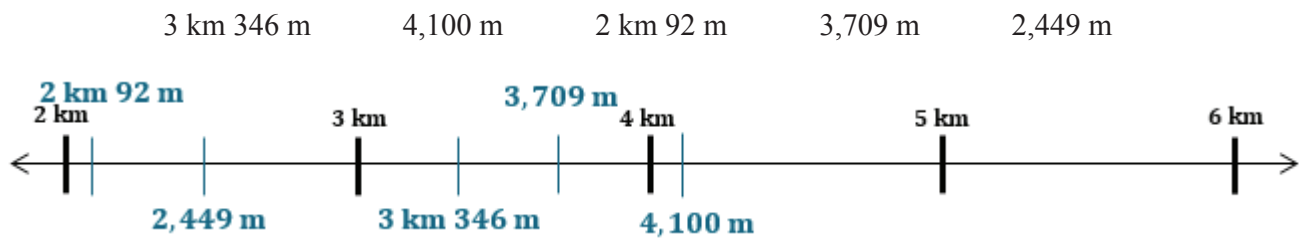
In Lessons 4 and 5, students relate what they know about place value units as they **convert**, compare, place metric measurements on a **number line**, and solve word problems.

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 **tape 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.



Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at [GreatMinds.org](http://GreatMinds.org).

## 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 tape 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.

**Kilogram (kg):** Unit of measure for mass.

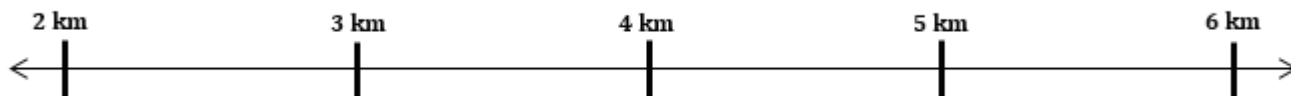
**Milliliter (mL):** Unit of measure for liquid volume.

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

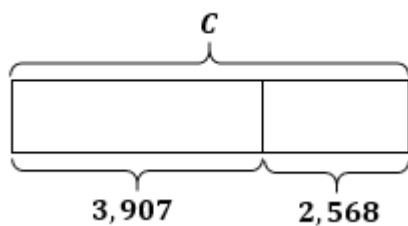
Metric Conversions	
1 kg	1,000 g
1 L	1,000 mL
1 km	1,000 m
1 m	100 cm

**MODELS**

**Number Line**



**Tape Diagram**



**Tape Diagram**

