Name _____

Solve Multi-step Metric Measurement Problems

(**I Can**) solve multi-step problems that include measurement conversions.
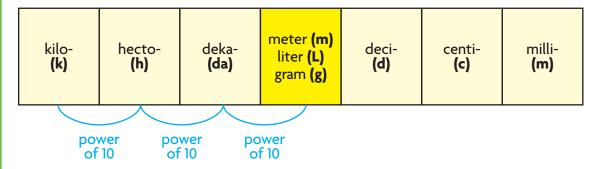
▦ UNLOCK the Problem Real World

Using a map, Rem estimates the distance between his house and his grandparent's house to be about 15,000 meters. About how many kilometers away from his grandparent's house does Rem live?

The metric system is based on place value. Each unit is related to the next largest or next smallest unit by a power of 10.

- Underline the sentence that tells you what you are trying to find.
- Circle the measurement you need to convert.

One Way Convert 15,000 meters to kilometers.

kilo- (k)	hecto- (h)	deka- (da)	meter (m) liter (L) gram (g)	deci- (d)	centi- (c)	milli- (m)

power of 10   power of 10   power of 10

STEP 1 Find the relationship between the units.

Meters are _____ powers of 10 smaller than kilometers.

There are _____ meters in 1 kilometer.

STEP 2 Determine the operation to be used.

I am converting from a _____ unit to a

_____ unit, so I will _____.

STEP 3 Convert.

number of   meters in   number of
  meters   1 kilometer   kilometers
   ↓   ↓   ↓

  15,000   ◯   _____   =   _____

So, Rem's house is _____ kilometers from his grandparent's house.

> **Math Talk**
>
> **MTR 5.1** Use patterns and structure.
>
> Choose two units in the chart. Explain how you use 10 to describe how the two units are related.

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Another Way Use a diagram.

Jaime made a bracelet 1.8 decimeters long.
How many millimeters long is Jamie's bracelet?

Convert 1.8 decimeters to millimeters.

				1	8	
kilo-	hecto-	deka-	meter liter gram	deci-	centi-	milli-

STEP 1 Show 1.8 decimeters.

Since the unit is decimeters, place the decimal point to show decimeters as the unit.

STEP 2 Convert.

Cross out the decimal point and place it to show millimeters as the unit. Write zeros to the left of the decimal point as needed.

STEP 3 Record the value with the new units.

1.8 dm = _____ mm

So, Jaime's bracelet is _____ millimeters long.

Try This! Complete the equation to show the conversion.

A Convert 247 millimeters to centimeters, decimeters, and meters.

Are the units being converted to a larger unit or a smaller unit? _____

Should you multiply or divide by powers of 10 to convert? _____

247 mm $\bigcirc$ 10 = _____ cm

247 mm $\bigcirc$ 100 = _____ dm

247 mm $\bigcirc$ 1,000 = _____ m

B Convert 3.9 hectoliters to dekaliters, liters, and deciliters.

Are the units being converted to a larger unit or a smaller unit? _____

Should you multiply or divide by powers of 10 to convert? _____

3.9 hL $\bigcirc$ 10 = _____ daL

3.9 hL $\bigcirc$ 100 = _____ L

3.9 hL $\bigcirc$ 1,000 = _____ dL