

Unit 9 Converting Metric Units

Unit 9 Geometry

Day 1

Name _____

Date _____ Period _____

Warm Up

There are 100 centimeters to a meter.

If a guitar is one meter (m) long, how long is it in centimeters (cm)?

If a man is two meters (m) tall, how tall is he in centimeters (cm)?

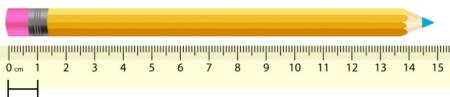
← 1 meter (m) →

← 100 centimeter (cm) →

← 1,000 millimeter (mm) →



Converting Measurements



$$15 \text{ cm} \cdot \frac{10 \text{ mm}}{1 \text{ cm}} =$$

$$15 \text{ cm} \cdot \frac{10 \text{ mm}}{1 \text{ cm}} = 150 \text{ mm}$$

A measurement can be converted to an equal amount with a different unit.

Ex: Centimeters to millimeters. Grams to kilograms

To Convert units:

1) Represent the conversion with a unit rate.

2) Cancel the units, and multiply.

A crayon is 9 centimeters (cm) long. How long is it in millimeters (mm)?

$$9 \text{ cm} \cdot \frac{10 \text{ mm}}{1 \text{ cm}} =$$

A pen is 1200 millimeters (mm) long. How long is it in centimeters (cm)?

$$110 \text{ mm} \cdot \frac{1 \text{ cm}}{10 \text{ mm}} =$$

A table is 3 meters (m) long. How long is it in centimeters (cm)?

$$3 \text{ m} \cdot \frac{100 \text{ cm}}{1 \text{ m}} =$$

A coffee mug holds 500 milliliters of coffee. How much is that in liters?

$$500 \text{ mL} \cdot \frac{1 \text{ L}}{1,000 \text{ mL}} =$$

A soda bottle holds 2 liters (L) of soda. How much is that in milliliters (mL)?

$$2 \text{ L} \cdot \frac{1,000 \text{ mL}}{1 \text{ L}} =$$

A single molecule of DNA, if stretched out, is 2,000 millimeters (mM) long. How long is that in meters (m)?

$$2,000 \text{ mm} \cdot \frac{1 \text{ m}}{1,000 \text{ mm}} =$$

Length

1 kilometer (km) = 1,000 meters (m)

1 meter (m) = 100 centimeters (cm)

1 centimeter (cm) = 10 millimeters (mm)

Volume

1 Liter (L) = 1,000 milliliters (mL)

Weight and Mass

1 kilogram (kg) = 1,000 grams (g)

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Length	Volume	Weight and Mass
1 kilometer (km) = 1,000 meters (m) 1 meter (m) = 100 centimeters (cm) 1 centimeter (cm) = 10 millimeters (mm)	1 Liter (L) = 1,000 milliliters (mL)	1 kilogram (kg) = 1,000 grams (g)

1. John is 1.9 meters tall. What is 1.9 meters in centimeters?

2. Maria weighs 60 kg. What is equivalent to 60 kg in grams?

1.9 m · _____

3. A football field is 90 meters long. What is equivalent to 90 meters in kilometers?

4. An apple weighs 120 g. What is equivalent to 120 g in kilograms?

5. A recipe calls for 700 mL of water. What is equivalent to 700 mL in liters?

6. A marathon is 42 kilometers? What is equivalent to 42 kilometers in centimeters?

Metric Conversion

King	Henry	Died	Unexpectedly	Drinking	Chocolate	Milk
Kilo	Hecto	Deca	* Unit * <i>Metre</i> (length) <i>Litre</i> (liquid volume) <i>Gram</i> (mass/weight) 1 unit	Deci	Centi	Milli
$10 \times 10 \times 10 \times$ LARGER than a unit	$10 \times 10 \times$ LARGER than a unit	$10 \times$ LARGER than a unit		$10 \times$ SMALLER than a unit	$10 \times 10 \times$ SMALLER than a unit	$10 \times 10 \times 10 \times$ SMALLER than a unit
1 kilo = 1,000 units	1 hecto = 100 units	1 deca = 10 units		10 deci = 1 unit	100 centi = 1 unit	1,000 milli = 1 unit
km = kilometre kL = kilolitre kg = kilogram Ex: 5 kilo	hm = hectometre hL = hectolitre hg = hectogram 50 hecto	dam = decametre dal = decalitre dag = decagram 500 deca	m = metre L = litre g = gram 5,000 units	dm = decimetre dL = decilitre dg = decigram 50,000 deci	cm = centimetre cL = centilitre cg = centigram 500,000 centi	mm = millimetre mL = millilitre mg = milligram 5,000,000 milli