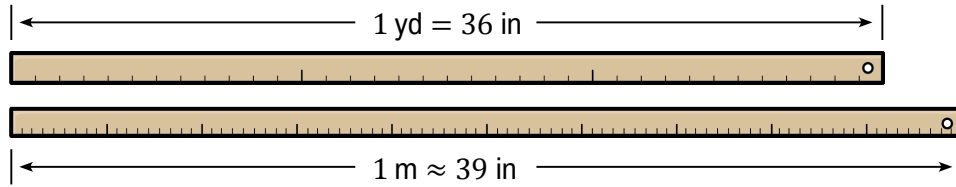


TOPIC: METRIC UNITS OF LENGTH

Intro to the Metric System

- ◆ The metric system has 1 basic unit of length (**meter**) & scales up/down by multiples of ____, indicated by **prefixes**.



New

The Metric Units of Length

1 **kilometer (km)** = 1000 m

1 **hectometer (hm)** = 100 m

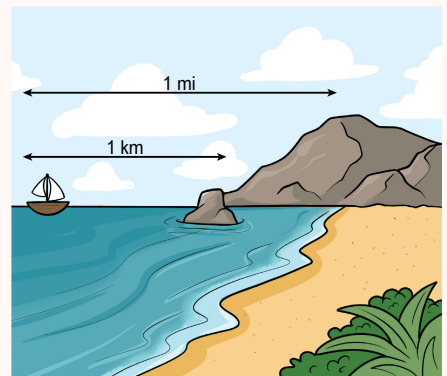
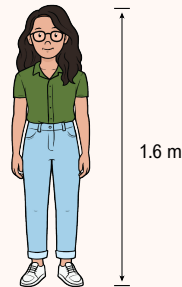
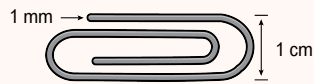
1 **dekameter (dam)** = 10 m

1 meter (m) = 1 m

1 **decimeter (dm)** = 0.1 m

1 **centimeter (cm)** = 0.01 m

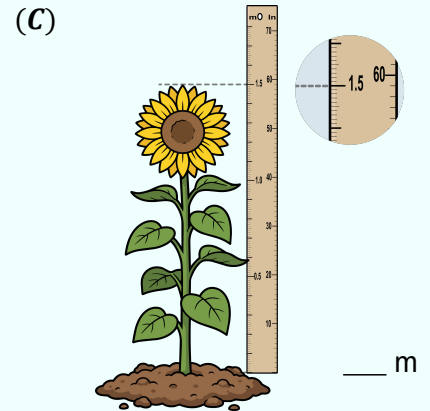
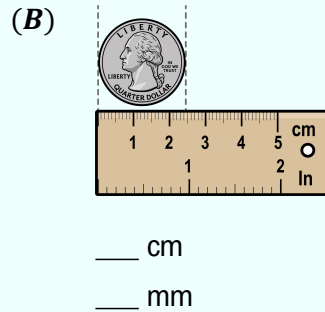
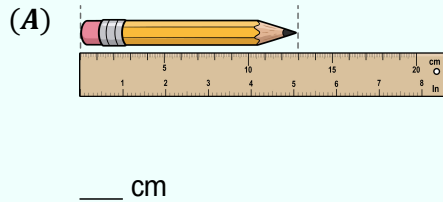
1 **millimeter (mm)** = 0.001 m



TOPIC: METRIC UNITS OF LENGTH

EXAMPLE

Approximate the length of the objects.



PRACTICE

Select the most reasonable metric unit for the given object.

(A) A pencil is about 18 ___ long.

[mm | cm | m | km]

(B) A soccer field is about 100 ___ long.

[mm | cm | m | km]

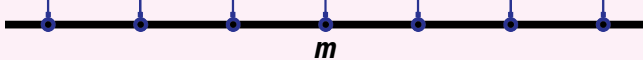
(C) A grain of rice is about 7 ___ long.

[mm | cm | m | km]

TOPIC: METRIC UNITS OF LENGTH

Conversions: Metric Length

◆ We can convert between metric units of measurement using **unit fractions** or a **prefix line**.

Unit Fractions	Metric Length	Prefix Line
Multiply by $\frac{\text{new unit}}{\text{original unit}}$ $\frac{250 \text{ m}}{1} \times \frac{\text{km}}{\text{m}} = \text{km}$	1 km = 1000 m 1 hm = 100 m 1 dam = 10 m 1 meter 1 dm = 0.1 m 1 cm = 0.01 m 1 mm = 0.001 m	Move decimal ← or → based on # of places the new unit is from the original unit. kilo 1000 hecto 100 deka 10 basic unit 1 deci 0.1 centi 0.01 milli 0.001  250 m = km

EXAMPLE

Convert the following measurement.

$$23.6 \text{ hm} = \underline{\hspace{2cm}} \text{ cm}$$



King Henry Doesn't Usually Drink Chocolate Milk

TOPIC: METRIC UNITS OF LENGTH

PRACTICE

Fill in the blanks to convert as indicated.

(A) 4500 mm = _____ m

(B) 650 m = _____ dam

PRACTICE

Fill in the blanks to convert as indicated.

(A) 7300 cm = _____ mm

(B) 65 hm = _____ dm

EXAMPLE

Complete the table by converting to the indicated metric units.

	millimeters (mm)	centimeters (cm)	meters (m)	kilometers (km)
Town bridge			650	
A guitar		110		

EXAMPLE

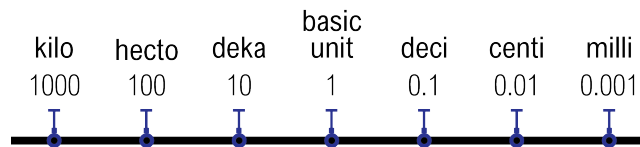
A steel cable is 48,500 millimeters long. What is its length in meters?

TOPIC: METRIC UNITS OF LENGTH

Operations: Metric Length

◆ Recall: Measurements can be added or subtracted only if they have *like* units.

► When adding or subtracting with metric units, **first** _____ to one unit and then combine.



EXAMPLE

Perform each operation.

(A) Subtract 560 m from 2.5 km

(B) Add 1.6 m and 12 cm

(C) Divide 12.6 m by 3

TOPIC: METRIC UNITS OF LENGTH

PRACTICE

Perform the indicated operation.

(A) $2 \text{ km} + 450 \text{ m}$

(B) $310 \text{ mm} - 6 \text{ cm}$

(C) $2.4 \text{ m} \times 6$

(D) $13.2 \text{ cm} \div 4$

EXAMPLE

A tailor has 14,250 cm of ribbon. She cuts the ribbon into 75 equal pieces of equal length. How long is each piece in meters?

TOPIC: METRIC UNITS OF LENGTH

Resource Guide

