

Name: _____

Date: _____

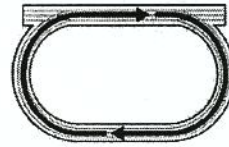
1.3 SI-English Conversions



Even though the United States adopted the SI system in the 1800's, most Americans still use the English system (feet, pounds, gallons, etc.) in their daily lives. Because almost all other countries in the world, and many professions (medicine, science, photography, and auto mechanics among them) use the SI system, it is often necessary to convert between the two systems.

It is useful to be familiar with examples of measurements in both systems. Most people in the United States are very familiar with English system units because they are used in everyday tasks. Some examples of SI system measurements are:

One kilometer (1 km) is about two and a half times around a standard running track.



One centimeter (1 cm) is about the width of your little finger.



One kilogram (1 kg) is about the mass of a full one-liter bottle of drinking water.



One gram (1 g) is about the mass of a paper clip.



One liter (1 l) is a common size of a bottle of drinking water.



One milliliter (1 mL) is about one droplet of liquid.



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1.3 SI Unit Conversion—Extra Practice



Science is about exploring and understanding the universe, from the tiniest subatomic particles to the mind-boggling expanses of interstellar space. We gain understanding by asking questions, observing, measuring, and sharing results with others. You will use SI (metric) measuring tools for this purpose throughout the year. This skill sheet will help you become familiar with the SI prefixes you will use to measure length, mass, and volume.

Here are the prefixes you will use to report measurements:

Prefix	kilo-	hecto-	deka-	Basic unit (no prefix)	deci-	centi-	milli-
Symbol	k	h	da	m, g, l	d	c	m
Multiplication Factor or Place-Value	1,000	100	10	1	0.1	0.01	0.001

EXAMPLE

1. How many centimeters are there in 24 meters?

a. Restate the question: 24 meters = _____ centimeters.

b. Use the place value chart above to determine the multiplication factor, and solve.

Count the number of places on the chart it takes to move from meters (the ones place) to centimeters (the hundredths place). Since it takes 2 moves to the right, the multiplication factor is 100. Move the decimal two places to the right.

$$24.00 \times 100 = 24.0.0. = 2,400$$

move decimal two
places to the right

Solution: multiply $24 \times 100 = 2,400$.

Answer: There are 2,400 centimeters in 24 meters.

PRACTICE

Use the chart above to help you answer the following questions.

Part A: Distance conversions

- Earth's diameter is 12,756 kilometers. How many meters is this?
- The diameter of Earth's moon is 3,476 kilometers. Express this distance in centimeters.
- The average distance between Earth and its moon is 384,000,000 meters. Express this distance in kilometers.
- A billion years ago, Earth and its moon were just 200,000 kilometers apart. Express this distance in meters.