

Tropical Ecology
Assignment #2
Metric system

The metric system was devised by French scientists in the late 18th century to replace the chaotic collection of units then in use in different countries. The advantages of the system quickly became clear, as it did not rely on a miscellany of separate standards and it used a decimal system rather than fractions. Currently, the United States is one of the few countries that does not use the metric system to measure weight, length, area, volume, and temperature (although all scientific measurements use the metric system). Australia passed the Metric Conversion Act in 1970 making the metric system the sole system of legal measurement. The country gradually began adopting the metric system in the 1970's and completed the switch by 1988.

Converting between metric units is relatively easy because the system is based on units of 10's: there are 10 millimeters in a centimeter, 100 centimeters in a meter, 1000 meters in a kilometer, etc. Converting between English and metric units is more difficult but for travelers to other countries, it's an important skill to acquire. The objective of this assignment is to familiarize you with the units used to measure length, weight, area, volume, and temperature in the metric system and to give you practice in converting English measurements to metric units and vice versa.

This assignment is due in class Wednesday, February 18th. I want you to show all your work so just do your calculations and write your answers on a separate piece of paper that you can turn in.

Use this table to answer the questions on the next page.

<u>metric unit</u>	<u>English equivalent</u>
length:	
kilometer	0.62 miles
meter	39.37 inches
centimeter	0.39 inches
millimeter	0.039 inches
area:	
square kilometer	0.3861 square miles
hectare	2.47 acres
square centimeter	0.155 square inch
volume:	
cubic centimeter	0.061 cubic inch
liter	1.057 quarts
mass:	
kilogram	2.2046 pounds
gram	0.035 ounces
temperature:	
Celsius degrees	(Fahrenheit degrees - 32) X 5/9

RECORD YOUR CALCULATIONS AND WRITE YOUR ANSWERS ON A SEPARATE PIECE OF PAPER.

1. Which is longer, 2.78 miles or 5.2 kilometers?
2. In a marathon, racers run approximately 24.3 miles. How far is this in kilometers?
3. Lizard Island is approximately 270 km north of Cairns. How far is that in miles?
4. Approximate your height: _____ inches. How tall are you in centimeters? _____ cm
in meters? _____ m
5. You buy exactly 900 centimeters of rope. Approximately how many feet is that?
6. Average human body temperature is 98.2°F . That equals _____ $^{\circ}\text{C}$
7. If it's 20°C in the room, how warm is it in Fahrenheit degrees? _____ $^{\circ}\text{F}$
8. Water freezes at 32°F . This equals _____ $^{\circ}\text{C}$
9. If the gas tank on your car holds 12 gallons, how many liters will it take to fill the tank?
10. Which is cheaper, milk at $\$2.47/\text{gallon}$, or gas at $\$0.58/\text{liter}$?
11. What is the weight in kilograms of a person who weighs 180 pounds?
12. If a person buys 23 kilograms of dog food, how many pounds are they getting?
13. Which is larger, 50 hectares or 150 acres?