Immunity Challenge
Metric Mania

Team Members: _____ Color: _____

Complete each of the following tasks using your knowledge of the metric system.

(1) What tool or instrument is used to measure each of the following?

Length _____   Liquid Volume _____

Mass _____   Temperature _____

(2) What metric unit of measurement is used to measure each of the following?

Length _____   Liquid Volume _____

Mass _____   Solid Volume _____

Time _____   Temperature _____

(3) Visit each station and use the materials to answer each question below.

← ——— A – Draw a line at the side of page   E - _____ ml

B - _____ m   F - _____ g

C - _____ mm   G - _____ g

D - _____ ml   H - _____ ml

(4) Convert each measurement below using your knowledge of the metric system.

(a) 1000 mm = _____ m   (b) 14 cm = _____ m   (c) 3 km = _____ m

(d) 5 mm = _____ cm   (e) 1 m = _____ cm   (f) 23.5 kg = _____ g

(g) 980 kg = _____ mg   (h) 1500 ml = _____ L

(5) Convert each measurement below using the conversion chart and a calculator. Round your answers to the nearest hundredth when needed.

(a) 100 g= _____ oz   (b) 500 cm = _____ in   (c) 15 lb = _____ kg

(d) 100 mi = _____ km   (e) 200 km = _____ mi   (f) 300 in = _____ m

(g) 32° F = _____ ^{o} C   (h) 90° F = _____ ^{o} C

Tie Breaker: Guess the height of the teacher's desk to the nearest millimeter. _____ mm

Conversion Card

Metric ↔ Metric Conversions

Kilo - 1000 units							
	Hecto - 100 units						
		Deka - 10 units					
			Basic Unit				
				Deci - 0.1 units			
					Centi - 0.01 units		
						Milli - 0.001 units	

To convert to a smaller unit, move decimal point to the right or multiply. →

To convert to a larger unit, move decimal point to the left or divide. ←

English ↔ Metric Conversions

To go from one unit to another, multiply by ...			
ml	->	fl oz	0.0338
fl oz	->	ml	29.575
l	->	gal	0.2642
gal	->	l	3.785

To go from one unit to another, multiply by ...			
cm	->	in	0.3937
in	->	cm	2.54
m	->	ft	3.2808
ft	->	m	0.3048
km	->	mi	0.6214
mi	->	km	1.609

To go from one unit to another, multiply by ...			
g	->	oz	0.0353
oz	->	g	28.35
kg	->	lbs	2.2046
lbs	->	kg	0.4536

Measurement Station Notes:

Items for each measurement station...

A – 3 pieces of yarn labeled with each length – 5 cm, 15 cm, 20 cm

B – A meter stick (located near a doorway)

C – A small metric ruler (if available) or regular metric ruler

D – Glass or container of water with a lid and 3 small ziploc bags filled with various amounts of water (label each bag in milliliters).

E – Plastic water bottle, graduated cylinder (25 milliliters), and a container of water or access to a sink and faucet

F – Triple-beam balance and a film canister filled with sand or pebbles

G – Science textbook and 3 items with each mass labeled in grams

H – 50 ml graduated cylinder – fill to 20 ml and add three marbles (You may want to cover the top of the cylinder with plastic wrap to keep the students from spilling any water during the activity.

Measurement Station Cards

Station A - Draw a line on the side of your answer sheet that measures 28 centimeters in length. You cannot use a ruler, but may use the items provided to help you estimate the length.

Station B - Measure the height of the doorway in meters. Use the meter stick provided to help you and round your answer to the nearest hundredth.

Station C - Measure the width of this page in millimeters. Use the ruler provided to help you.

Station D - Estimate the volume of water in the glass in milliliters. You cannot use a graduated cylinder or beaker, but may use the items provided to help you estimate the volume.

Station E - Estimate the volume of water the bottle would hold if filled to the rim. You may use the graduated cylinder and water to help you.

Station F - Measure the mass of the film canister in grams. Use the triple-beam balance to help you. Round your answer to the nearest tenth of a gram.

Station G - Estimate the mass of the textbook. You may use the items that are provided to help you.

Station H - What is the volume of the three marbles in milliliters? The volume of water before adding the marbles was 20 mL.