Date _____ Name _____

Section _____ Team _____

Instructor _____ _____

Pre-Lab Study Questions

1. What are the standard units of length, mass, volume, and temperature in the metric system?

2. Why is the metric (SI) system called a decimal system of measurement?

3. What is the purpose of using prefixes in the metric system?

4. Fill in the blank lines below with the unit name, abbreviation, and property measured.

Unit Name	**Abbreviation**	**Property Measured**
_____	L	_____
centimeter	_____	_____
_____	km	_____
_____	mg	_____

5. Identify each of the following as a measured number or an exact number:

5 books	_____	9.25 L	_____
0.035 kg	_____	100 cm in 1 m	_____
12 beakers	_____	59.067 g	_____
1000 mL = 1 L	_____	8.03 mL	_____

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REPORT SHEET

Chemistry and Measurement

A. Measuring Length

1. What units are represented by the *numbers* marked on the meterstick?

What do the small lines marked on the meterstick represent?

Complete the following statements:

There are _____ centimeters (cm) in 1 meter (m).

There are _____ millimeters (mm) in 1 meter (m).

There are _____ millimeters (mm) in 1 centimeter (cm).

Item	2. Length	3. Estimated Digit	4. Number of Significant Figures
Width of little fingernail	_____	_____	_____
Distance around wrist	_____	_____	_____
Length of your shoe	_____	_____	_____

5. Length of line _____

Your measurement _____

Other students' values _____ _____

How does your value of the line length compare to those of other students?

Questions and Problems

Q1 What digits in the measurements for the line by other students are the same as yours and which are different?

B. Measuring Volume

Volume of a liquid (*include units for every measurement*)

	Cylinder 1	Cylinder 2	Cylinder 3
1. Volume (mL)			

Volume of a solid by displacement

2. Initial volume of water _____
3. Volume of water and submerged solid _____
4. Volume of solid (3 – 2) _____

C. Measuring Mass

Item	1. Mass	4. Number of Significant Figures
1. Beaker	_____	_____
Stopper	_____	_____
Evaporating dish	_____	_____
2. Unknown #_____	_____	_____
3. Actual mass of unknown	_____	_____

Questions and Problems

Q2 State the number of significant figures in each of the following measurements:

4.5 m	_____	204.52 g	_____
0.0004 L	_____	625.000 mm	_____
805 lb	_____	34.80 km	_____

Q3 Indicate the estimated digit in each of the following measurements:

1.5 cm	_____	4500 mi	_____
0.0782 in.	_____	42.50 g	_____
48.231 g	_____	8.07 lb	_____