

LAB GROUP 1:

TOPIC: Conversions

1. Match the prefix to the value:

Kilo	.001
Centi	.01
Milli	1000

2. Explain why we can use a conversion ratio to move from one unit to the next.

3. What are the base units of the metric system for mass, length, and volume (capacity).

4. Convert 700 mL into L (Liters) using dimensional analysis.

5. Experimental Analysis: A student finds that the density of 3 liquids varies by pouring the liquids into a mason jar and letting them sit and settle. When she comes back to look at the jar with the 3 liquids in it, what does she observe and why?

Make a sketch of this observation.

LAB GROUP 2:

TOPIC: Moles

1. Define the following terms:

Amu -

Mole-

Avogadro's Number -

Gram formula Mass -

2. Explain why we have two extremes in chemistry - very large numbers and really small numbers.

3. Why is a mole a counting unit?

4. How many moles are in 300 grams of CH_4 ?

5. Experimental Analysis: A scientist wants to identify 3 bars of metal that were not stored back properly in their containers. He has a scale in the workroom nearby and a Periodic Table is attached to the workroom wall. How can he use these to discover the metals' identities?

LAB GROUP 3:

TOPIC: Acids & Bases

1. Define the following:

Acid –

Base –

Titration –

Indicator –

2. Why is a titration considered stoichiometry?

3. Choose 3 acid-base indicators and explain how they function.

4. Computation: What is the molarity of 245.0 g of H_2SO_4 dissolved in 1.000 L of solution?

5. Experimental Analysis: A student is testing a solution to find out if it is acidic using a pH strip. What can the student expect if this solution is an acid? A base?

LAB GROUP 4:

TOPIC: IONIC/COVALENT COMPOUNDS

1. Match the following terms and definitions

Covalent	a compound composed of ions bound by opposite charges
Ionic	a rule of solubility
Like Dissolves Like	a compound composed of nonmetals sharing electrons

2. How can you distinguish between a covalent and ionic compound experimentally?

3. What is the difference between polar and non-polar (purely) covalent compounds?

4. Computation: Please write the formulas for the following compounds:

- | | |
|------------------------------|------------------------------|
| a) potassium sulfate _____ | b) lithium chloride _____ |
| c) carbon tetrahydride _____ | d) dihydrogen monoxide _____ |

5. Experimental Analysis: When a chemistry student notices gum on her new coat, she immediately grabs a Sprite of the breakroom refrigerator and pours it onto the gum. Why does the Sprite dissolve the gum? What common rule of solubility does this demonstrate?