**Chemistry Outline Notes**

***Unit 1: Analyzing Matter***

*Corresponds to “Chapter 2: Analyzing Data” & “Chapter 3: Matter-Properties and Changes” from textbook.*

### For the Unit:

1. Unit opening page
   1. Name of unit- Analyzing Matter
   2. Picture

### Each Week:

* Update your table of contents
* Number your pages
* Write neatly

### SI System & Dimensional Analysis

1. I can translate data into the correct units and dimensions using conversion factors.
   1. Pg. 32-35
      1. Write I can statement
      2. Explain purpose of SI system.
      3. Explain the use of base units, and define the base units for each quantity.
      4. Make a post-it note with the metric unit prefixes found in Table 2.2. (We will use this note during calculations.)
      5. Research a current event related to the metric system. Cite the article and explain in @ least a paragraph what it is about and how it relates.
   2. Pg. 44-45
      1. Define dimensional analysis.
      2. Define conversion factor & give an example. Explain the example.
      3. Explain how to do dimensional analysis.   
         Give an example of a dimensional analysis problem (@ least 2 step problem.)
      4. Give a real world example of using dimensional analysis.

### Scientific Notation

1. I can write numbers in standard and scientific notation.
   1. Pg.40-41
      1. Write I can statement.
      2. Explain the purpose of scientific notation.
      3. Explain how to write numbers in scientific notation from standard notation.
      4. Give an example of going from standard to scientific notation.
      5. Give a real world example of scientific notation.

### Density

1. I can explain and solve for density.
   1. Pg. 35-28
      1. Write I can statement.
      2. Draw a picture illustrating the difference between high density and low density.
      3. Define volume, and explain how it could be determined.
      4. Write definition of density.
      5. Write equation for density, and label equation appropriately.
      6. Given an example of solving for density. Explain steps.
      7. Explain how to use density to determine if an object sinks or floats in water.

**Significant Figures**

1. I can determine the correct # of significant figures in a number or calculation.
   1. Pg. 50-54
      1. Write I can statement
      2. Describe the purpose of significant figures.
      3. Picture (hand drawn or computer generated) that applies to the concept of sig.figs.
      4. Make a post-it note with the rules for determining the number of significant figures.
      5. Give an example for each rule and clearly label the significant figures in the example.
      6. Explain the reasoning behind rounding with significant figures.
      7. Give an example of rounding with significant figures and label example.
      8. Write/copy the rules for addition/subtraction and multiplication/division.
      9. Show a calculation for each type with correct # of sig.figs. Explain each calculation.
      10. Given real world example of sig.figs.

### Accuracy & Precision

1. I can qualitatively and quantitatively describe data as accurate, precise, or both.
   1. Pg. 47-49
      1. Write I can statement.
      2. Draw picture representing the different combinations of precision & accuracy. (Label pictures.)
      3. Definition of accurate. Give example of accurate.
      4. Definition of precise. Give example of precise.
      5. Write definition of % error.
      6. Write % error equation and show example of calculation.
      7. Explain how to choose appropriate tools to be accurate and precise.
      8. Give real world example of accuracy and precision.

### Types of Matter

1. I can differentiate among the types of matter.
   1. Pg. 70-72, Pg. 84-86, Pg. 80-81
      1. Write I can statement
      2. Define pure substance. Give example.
      3. Define element. Give example. Draw picture representing what an element looks like at a submicroscopic level.
      4. Define compound. Give example. Draw picture representing what a compound looks like at a submicroscopic level.
      5. Define mixture.
      6. Define heterogeneous mixture. Give an example. Draw picture representing what a heterogeneous mixture looks like at a submicroscopic level.
      7. Define homogeneous mixture. Give an example. Draw picture representing what a homogeneous mixture looks like at a submicroscopic level.
      8. Give real life connections to at least 3 types of matter.

### Properties of Matter

1. I can define and identify properties of matter and the changes it undergoes.
   1. Pg. 73-75, Pg. 76-79
      1. Write I can statement
      2. Define physical property. Give example.
      3. Contrast extensive and intensive properties.
      4. Define chemical property. Give example.
      5. Define physical change. Give example.
      6. Define chemical change. Give example.
      7. List examples of evidence of a chemical reaction.
      8. Draw picture representing the difference between a physical/chemical change.
      9. Give a real world example of a chemical and physical change.

**Definite & Multiple Proportions**

1. I can explain how all compounds obey the laws of definite/multiple proportions.
   1. Pg. 87-90
      1. Write I can statement.
      2. Define the law of definite proportions.
      3. Draw a picture that depicts this law.
      4. Explain % by mass.
      5. Write equation for % by mass.
      6. Show example problem, and label example.
      7. Define the law of multiple proportions.
      8. Draw a picture that depicts this law.
      9. Give a real world example of either law.

**Lab Procedures**

1. I can perform safe lab procedures and behaviors.
   1. Write I can statement.
   2. Highlight key points of safety contract.
   3. Make a creative cartoon illustrating 3 safe (or unsafe) lab behaviors. No 2 illustrations should be the same-this indicates they are either not creative or copied.
   4. Give a personal real-life example where you could use safe lab procedures outside of class.

**Lab Equipment**

1. I can use and read measurement tools correctly.
   1. Write I can statement.
   2. List 3 measurement tools/equipment and the unit that is measured (Ex. Beaker-mL)
   3. Draw a measurement from a graduated cylinder, including the correct scale of the cylinder and a meniscus, and record the correct measurement to be recorded from the cylinder.
   4. Give real world example of measuring correctly. (or incorrectly)
2. **Current Event**
   1. Find a newspaper, magazine, or internet article **from 2013 to the present** about a topic from this unit
   2. Staple/glue/tape your article in your journal.
   3. Write a couple of bullet points explaining the article.
   4. Write a couple bullet points connecting the article to what we learned in class.
3. **End of Unit**
   1. Concept Map (Classification of Matter)
   2. Review the I can statements throughout unit. Check off topics you are comfortable with, and star the ones you need to study more.
   3. Create a colorful, color-coded study guide using already created notes. (Use highlighters, colored pens.)
      1. Review: Lab equipment/Safety, Physical/Chemical Properties & Changes, Density, Significant Figures, Error, Dimensional Analysis, SI System, Scientific Notation, Laws
   4. Review Bell Work Questions.