Unit 1 Exam Checklist. Students should be able to do the following:

1. Classify matter as an element, homogeneous mixture, heterogeneous mixture, or a compound.
2. Identify and describe differences between chemical vs. physical changes and properties. List and explain indicators of a chemical change.
3. Apply basic concepts regarding chemical equations: identify reactant(s) vs. product(s), “yield” sign, etc.
4. Explain and apply the Law of Conservation of Mass.
5. Calculate percent composition and percent error (Separation of a Mixture Lab).
6. Apply the differences in meaning between “accuracy” and “precision.”
7. Sig Figs: Recognize appropriate level of uncertainty while taking measurements – estimate the last digit.
8. Count the amount of significant figures in measurements.
9. Apply significant figures rules to mathematical operations (× ÷ vs. + –).
10. Express numbers in scientific notation to the appropriate amount of sig figs. Expand numbers in scientific notation back into standard notation to the appropriate amount of sig figs.
11. Perform operations with numbers written in scientific notation in the calculator using the exponent button.
12. Apply knowledge of metric prefixes to unit analysis. Construct appropriate conversion factor fractions for unit analysis.
13. Follow the factor label method (Dimensional Analysis) in solving word problems (one-step conversions, English-Metric conversions, & multi-step conversions).
14. Calculate an object’s mass, volume, or density using D = m/V. Compare object density vs. fluid density to predict whether an object will float or sink in a fluid.

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