AP Chemistry

Dr. Wilhelm

**Chapter One Reading Guide: Chemical Foundations**

*On a separate piece of paper, write a response to the following reading prompts while reviewing chapter one of your textbook.*

1. Understand/explain the importance of problem solving in the study of chemistry.
2. Identify the steps in the scientific method and define the difference between scientific theory and observation.
3. Distinguish the difference between qualitative and quantitative data.
4. Familiarize yourself with the SI units of measure (table 1.1) and metric prefixes (table 1.2).
5. What is meant by “uncertainty” in measurement and how does the application of significant figures help account for this when gathering quantitative data.
6. Distinguish between precision and accuracy.
7. Understand and apply the rules for counting significant figures and rounding rules.
8. Understand how and why is dimensional analysis used in chemistry and the importance of including units in your calculations.
9. Understand and apply dimensional analysis in the conversion of temperature (Fahrenheit↔ Celsius ↔ Kelvin) .
10. Define density and supporting mathematical manipulations. Why is density an important measurement in chemistry?
11. Define the term matter and the three basic states of matter.
12. What is the difference between a mixture and a pure substance?
13. Distinguish between a physical and a chemical change.
14. Identify three methods for separating mixtures and explain how they work.
15. Be able to classify matter using the flow chart described in Figure 1.13.