

-
- Goal:**
1. Define chemistry and see how it applies to everyday life and various careers.
 2. Refine ideas about the scientific method.
 3. Relate various concepts dealing with matter and energy.
 4. Describe and differentiate between various types of substances.
 5. Review the periodic table and properties of elements and compounds.
-

I. 1.1 What is Chemistry?

- A. Define *chemistry* -
- B. Identify applications of chemistry in everyday life.
- C. List the 5 major areas of chemistry.
 1. Which one interests you the most?
- D. Describe the scientific method. **Put aside preconceived notions you've brought to this class regarding hypothesis, theory, and law!**
 1. Be sure you can explain, in your own words, each step.
 2. Pay particular attention to the differences in the new definition of hypothesis.
 3. Be sure you understand law and theory. Be careful!

II. 1.2 Matter and Energy

- A. Explain the difference between mass and weight.
- B. Define energy
 1. list some types of energy
- C. State and explain the law of conservation of energy
- D. State and explain the law of conservation of mass
- E. Describe solids, liquids, and gases in terms of the particles they contain
- F. Distinguish between physical and chemical properties of matter
 1. give examples of each
 2. classify changes as physical or chemical and explain why
- G. List 4 ways you can tell that a chemical reaction has taken place.
- H. Distinguish between endothermic and exothermic reactions

III. 1.3 Classification of Matter

- A. Distinguish between homogeneous and heterogeneous matter
 1. Classify examples you're given
- B. Distinguish between a pure substance and a mixture
 1. Classify examples you're given
- C. List the types of homogeneous matter
- D. State the law of definite composition and explain its meaning for the analysis of a chemical compound
- E. Given a mixture of known composition, plan and carry out a successful separation scheme, documenting your results quantitatively and qualitatively.

IV. 1.4 The Chemical Elements (this should be review!)

- A. See Periodic Table Section of Notebook
- B. Name the assigned common elements, given their symbols and give symbols for names
- C. Describe the arrangement of the periodic table WRT groups etc. (as on handout, above)
- D. Explain the differences between the groups listed on the handout