

Assignment # 1 of the Summer Level-1 Chemistry packet requires you to outline Chapter 1 and Chapter 2 of your text: *Chemistry: Matter and Change*, McGraw Hill Glencoe, 2005.

The textbook is broken into segments that easily lend themselves for outline-style notes. When outlining, be sure to include all key topics and vocabulary words within each section. Below is a sample of an outline for Chapter One—some parts are left blank for you to fill in. You are responsible for complete outline notes for Chapter 2: **Matter—Properties and Changes**.

Chapter 1: INTRODUCTION TO CHEMISTRY

What You'll Learn

- Relationship between chemistry and _____
- How scientific methods can be used to solve problems
- Distinguish between scientific research and technology

Section 1.1 The Stories of Two Chemicals

A. The Ozone Layer

The ozone (O₃) layer absorbs most of the harmful ultraviolet (UV) radiation before it reaches Earth's surface

1. Earth's atmosphere

- a. consists of several layers: troposphere is lowest layer (0-15km) and contains the air we breathe
- b. ozone is located in the stratosphere (15-50 km)

2. Ozone formation

- a. _____ (O₃) is formed when oxygen gas is exposed to _____ radiation
- b. ozone forms over the equator where sunlight is strongest and flows toward the poles; ozone is used as a marker to follow the flow of air in the stratosphere
- c. 1981-1983 researchers noted low levels of ozone. This ozone "hole" is actually a _____ of ozone layer

B. Chlorofluorocarbons (CFCs)

A chlorofluorocarbon (CFC) is a chemical that consists of chlorine, fluorine, and carbon. Many types of CFCs—all are made in the laboratory. CFCs used as refrigerants, plastic foams and as propellants. Quantities of CFCs in the atmosphere continued to rise until a ban on products containing them went into effect.

Section 1.2 Chemistry and Matter

A. Chemistry: The Central Science

Chemistry is the study of _____. Chemistry is central to other sciences and to our everyday lives. Give examples (Refer to Fig 1-6)

B. Matter and Its Characteristics

1. Matter:

2. Mass vs Weight:

3. Branches in the field of Chemistry (List two)

Section 1.3 Scientific Methods

A. A Systematic Approach

1. Scientific Method is:
2. Observation is the act of gathering information
 - a. Qualitative data:
 - b. Quantitative data:
3. Hypothesis is
4. Experiment is
5. Independent variable
6. Dependent variable
7. Control is
8. Constants are
9. Conclusion is
10. Model
11. Theory
12. Scientific Law

Section 1.4 Scientific Research

How do scientists use qualitative and quantitative data to solve scientific problems?

A. Types of Scientific Investigations

1. Pure research seeks to
2. Applied research is

B. Benefits of Chemistry

We use pure research that has been conducted to address unexpected events, such as an epidemic. Products we use are the result of technological applications of pure and applied research, such as artificial limbs and nuclear power.

AFTER YOU FILL IN THE BLANKS FOR CHAPTER 1, YOU MUST CREATE YOUR OWN HAND-WRITTEN OUTLINE FOR CHAPTER 2.