

Chapter 1: Chemistry: The Study of Change

- Scientific Method: qualitative, quantitative, hypothesis, law, theory
- Matter: substances (elements or compounds) and mixtures
- States of matter, physical changes and chemical changes
- Units of measurement: Know metric prefixes: M = mega (10^6), k = kilo (10^3), c = centi (10^{-2}), m = milli (10^{-3}), μ = micro (10^{-6}), n = nano (10^{-9}). All measurements must be written with UNITS!!!
- Scientific Notation: Know how to calculate manually and with a calculator (use the “EE” key!!)
- Significant Figures (or significant digits): All calculated answers must be written with proper sig figs.
- Dimensional Analysis (factor label method or unit conversions). *You will be required to use this method for a significant number of calculations on the test!!!* You are required to know all metric prefixes, but equivalents needed for conversions within English units or between English & metric units will be given.

Extra Practice: WKS #1-2: Review Chapter 1 -- Chemistry: The Study of Change (for Thursday)

Optional Study Guide: Chap 1: Exercises and problems #1-18 and Practice Test # 1-18.

Note: Exercise 4c & d and Practice Test 3e, 8 & 12 answers in SG are incorrect. Correct answers will be posted on the website.

Chapter 2: Atoms, Molecules and Ions

- Differences between atoms, molecules, and ions.
- For elements and ions: symbols; # p, #n and # e; atomic number, mass number and isotopes
- Periodic Table:
 - metals, metalloids and nonmetals (know basic properties and position on table);
 - periods, groups, families (alkali metals, alkaline earth metals, transition metals, halogens, noble gases)
- Molecular Formulas, empirical formulas and ionic formulas
- Naming inorganic compounds:
 - a) ionic compounds (M & NM atoms): for monatomic anions, use -ide; for polyatomic anions use -ite or -ate
 - Use roman numerals for all transition metals! Put in charges to make NEUTRAL formulas!
 - *You will be given your polyatomic ion chart for unit tests, but NOT on the AP.*
 - b) molecular compounds (all NM atoms): *use Greek prefixes (di, tri, tetra, penta, ...) to designate # of atoms*
 - c) acids: You may consider a substance an acid if it is an aqueous solution and has an “H” first in its formula. (Exception is H₂O.)
 - has anion with -ide : *hydro _____ ic acid*
 - has oxoanion with per__ate : *per _____ ic acid*
 - has oxoanion with -ate: _____ *ic acid*
 - has oxoanion with -ite: _____ *ous acid*
 - has oxoanion with hypo__ite: *hypo _____ ous acid*
 - d) hydrates: use Greek prefixes to designate how many water molecules are attached.

Extra Practice: WKS #2-2: Review Chapter 2 -- Atoms, Molecules and Ions (for Friday)

Chapter 1 & 2 Multiple Choice Review WKS (for Friday)

Optional Study Guide: Chap 2: Exercises and problems (all) and Practice Test (all)