

AP Chemistry Ch 1 - Chemical Foundations - Keys Items

- All problem solving - ALWAYS trail of units from beginning to the end of calculation
- AP Exam - Be very familiar with SI system: Fundamental units, their prefixes, and symbols and how to convert them within the SI System
 - Frequently used: mega-, kilo-, centi- , milli-, micro- , and nano-
 - $1 \text{ cm}^3 = 1 \text{ mL}$
- Be able to assess whether an answer you come up with is logical, whether its dimension makes sense in the context of the problem. BE ABLE TO APPROXIMATE, part 1 of AP Exam no calculators
- Work must be labeled with correct units, and if units are omitted from a final answer, points will be lost on the AP exam.
- Be able to convert from Celsius to Kelvin temperature scale. Fahrenheit scale does not appear on AP Chemistry exam. Though Celsius and Kelvin read differently, the degree size of both scales is exactly the same. Therefore, in a calculation involving ΔT , you can use either Kelvin or Celsius degrees in the solving the problem
- Compounds can be separated into elements by chemical changes, and mixtures can be separated by physical changes.
- Filtering separates mixtures based on differences in particle size...the large particles are trapped on the filter paper while the soluble component goes through the filter paper and stays in the “**filtrate**”.
- **Distillation** separates mixtures based on differences in boiling point.
- **Chromatography** separates mixtures based on differences in polarity.
- In **paper chromatography**, the component that is most similar in polarity to the “mobile phase” moves up the farthest.
- Mass is conserved during chemical and physical changes.
- When reading a volume of a liquid in a container, you can estimate by reading in between the graduated markings. That can give you one more sig. fig. in your volume.

- **Ranking measuring devices** from least precise to most precise → beaker, graduated cylinder, volumetric flasks, burette (The volumetric flask only has ONE line on it to measure one specific volume.)
- The % composition by mass for a pure compound does not change.

Key Terms: Scientific Method, measurement, hypothesis, theory, model, uncertainty, significant figures, accuracy, precision, random and systematic errors, scientific (exponential) notation, dimensional (unit) analysis, density ($d=m/v$), matter, states of matter, homogeneous and heterogeneous mixtures, solutions, physical and chemical changes, compound