Sig Fig Review & Formula Mass

Quantitative Problem Solving

Significant Digits

- Significant Digits
  - Numbers that communicate **ACCURACY**
- Rules for Identifying Sig Figs:
  - 1. **Non-zeros** count
  - 2. **Final** zeros **after** the decimal count
  - 3. **Trapped** zeros count
  - 4. No other zeros count

Quantitative Problem Solving

Rounding To Significant Figures

314.721 (four)	0.001775 (two)	8092 (two)
4.3622×10^{-5} (three)	80.073 (three)	1040 (two)

Calculating Formula Mass

Composition

- Last unit, you learned to write chemical formulas for salts and molecules.
- Today, you will learn to calculate the masses for these compounds
- First, we must learn to break compounds into their elements

$$Mg_3(PO_4)_2$$

represents: 3 magnesium atoms
2 phosphorus atoms
8 oxygen atoms

Calculating Formula Mass

Composition

$Fe_2(SO_4)_3$

represents: 2 iron atoms
3 sulfur atoms
12 oxygen atoms

Calculating Formula Mass

Formula Mass

- Formula Mass (salts) & Molecular Mass (molecules)
  - The mass of one "formula unit" of compound
    - Given in atomic mass units (amu's)

Na_3PO_4

3 Na x 23.0 amu = 69.0u
1 P x 31.0 amu = 31.0u
4 O x 16.0 amu = 64.0u
164.0 u

Calculating Formula Mass

Formula Mass

Chromium III Sulfate