Chapter 3—Stoichiometry

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After this chapter, you should be able to…

- Explain how the atomic mass unit is currently defined
- Calculate average atomic masses from isotope masses and relative abundances
- Explain the relationship between the mole and Avogadro's number
- Calculate atomic, formula, molecular, and molar masses
    - Using a molar mass, be able to interconvert between mass and number of moles
- Explain the basic operation of a mass spectrometer
- Calculate the percent composition of a specified compound
- ~~Determine an empirical formula from combustion analysis data~~
    - Determine a molecular formula from the empirical formula and the molar mass
- Write a chemical equation, given names and physical states of reactants and products
    - Balance a chemical equation
    - Write a conversion factor relating moles of two substances in a chemical equation, and be able to use it in a calculation
- Given a chemical equation and the mass or number of moles of one compound, be able to calculate the mass or number of moles of another compound consumed/produced in the reaction
    - Calculate the limiting reagent in a chemical equation
    - Calculate the percent yield of a reaction, given relevant data