Isotopes

Summary

- same atomic number, different mass number / same number of protons and electrons, but different number of neutrons
- carbon has 3 isotopes, carbon-12, carbon-13, and carbon-14
- carbon-12 is most common, and carbon-14 is radioactive
- Chemical properties (same)
  - Same as the base atom because they have the same number of outer shell electrons
- Physical properties (different)
  - Because they have slightly different mass numbers, they have slightly different densities
  - boiling point, melting point, rate of diffusion may also change slightly
- Some uses of isotopes
  - Uranium is used as a fuel in the atomic energy industry
    - Uranium has 2 isotopes, Uranium-235 and Uranium-236
    - only Uranium-235 can be used as fuel
  - Carbon-14 is used to date remains of living things