

Objectives:

1. Describe chronologically the history of atomic theory
2. Describe the experiments/discoveries that lead to the evidence of electron, protons, and neutrons and name the scientists behind each discovery
3. Describe properties of all three subatomic particles
4. Identify how atoms of different elements are different.
5. Define what an ion is
6. Define what an isotope is
7. Calculate average atomic mass
8. Compare and contrast unstable and stable isotopes
9. Describe uses of unstable isotopes
10. Explain how wavelengths of light emitted by an atom provide information about electron energy levels
11. Define quantum number
12. Write electron configurations
13. Compare and contrast excited and ground state
14. Define, describe, and calculate moles of an atom.
15. Calculate molar mass
16. Calculate % composition
17. Define hydrate
18. Describe how periodic table is arranged and why
19. Locate and describe the characteristics of main groups/families
20. Compare and contrast location and properties of metals and nonmetals
21. Describe periodic trend of ionization energy, electronegativity, and atomic radii and why
22. Describe periodic trends of metallic character and reactivity and why.

Vocabulary:

- electron
- nucleus
- proton
- neutron
- atomic number
- atomic mass
- isotope
- ion
- rutherford
- bohr
- thompson
- orbital
- spectrum
- ground state
- excited state

- electron configuration
- atomic mass
- group
- period
- valence electrons
- alkali and alkaline metals
- halogens
- noble gases
- transition metals
- ionization energy
- electronegativity
- atomic radii
- electron shielding
- Quantum number