

Atomic Concepts and Periodic Table Objectives:

Atomic Concepts:

1. Compare and contrast the contributions and experiments of Dalton, Thomson, Rutherford, and Bohr to the modern atomic theory
2. Identify the three subatomic particles and compare their properties (location, charge, mass, etc)
3. What is an ion and how and why are they formed?
4. Describe the structure of an atom.
5. Identify what an isotope is and what changes to cause different isotopes.
6. Calculate average atomic mass from abundance of isotopes (remember "skittles" lab)
7. Describe how atoms can be identified based on electron movement (remember flame test lab)
8. Compare and contrast Bohr model with modern atomic theory
9. Distinguish the ground state from excited states of an atom based on electron configuration
10. Discuss importance of valence electrons

Periodic Table:

1. Identify how the periodic table is arranged.
2. Identify trends in electronegativity, ionization energy, radi, metallic character, and reactivity for groups and periods
3. Identify the location of solid, liquid, and gas elements at STP
4. Identify location and name of special groups on periodic table
5. Identify characteristics and trends of special groups on periodic table
6. Describe uses for special groups on periodic table
7. Identify and discuss both harmful and essential elements for the human body
8. Compare and contrast characteristics of metals, nonmetals, and metalloids

Vocabulary:

1. Dalton
2. Thomson
3. Rutherford
4. Bohr
5. Modern atomic theory
6. Atom
7. Proton
8. Neutron
9. Electron
10. Atomic mass
11. Atomic number
12. Isotope
13. Ion

14. Cation
15. Anion
16. Nucleus
17. energy level
18. orbital
19. electron configuration
20. ground state
21. excited state
22. valence electron
23. Alkali metals
24. Alkaline earth metals
25. Halogens
26. Noble gases
27. Transition metals
28. Groups
29. Periods
30. Electronegativity
31. Ionization energy
32. Metal
33. Nonmetal
34. Metalloid