

Atomic Theory

How did new technologies and investigations lead to changes in atomic theory?

How did the background of the atomic theorists influence their conclusions?

Democritus

John Dalton

Niels Bohr

Ernest Rutherford

J.J. Thomson

Quantum numbers-

1. principal quantum number (n) =

2. angular momentum number (l) =

s = _____ p = _____ d = _____ f = _____

3. magnetic quantum number (m_l) =

s = _____ p = _____

d = _____ f = _____

4. spin quantum number (m_s) =

_____ or _____

Atomic Structure

What is the arrangement and properties of the subatomic particles in an atom?

How does a Bohr model illustrate electron placement within an atom?

How does electron configuration illustrate electron placement using the quantum model?

What differences exist between the Bohr model and the quantum model?

atomic number =

mass number =

isotope =

energy level =

Bohr model-

average atomic mass-

mass	abundance
C-12	96.75%
C-14	3.25%

AW =

to calculate percent abundance:

atomic orbitals =

s = _____ p = _____ d = _____ f = _____

electron configuration:

orbital notation:

electron dot diagram:

electron cloud

valence electrons

strong nuclear force

quantum theory

Electromagnetic Spectrum

How can electrons be classified as both waves and particles?

How are frequency and wavelength related to the energy of a wave?

How does energy change impact the transition of electrons between energy levels?

components of an energy wave-

Energy level transition-

Energy absorbed

Energy released

electromagnetic radiation

frequency

spectroscope

wavelength

ground state

Radioactivity

What are the different ways that the atomic nucleus can change?

How can reactions be classified in terms of energy change and safety issues?

What is the relationship between the Big Bang Theory and fusion?

How does half-life relate to isotope stability?

nuclear decay/ emission

nuclear capture

particle	composed of	symbol

fission

fusion

radioactive dating

half-life

radiation

weak nuclear forces