

Concept 1 Notes: Structure of the Atom

Atom: the _____ particle of an element that still has the properties of that _____

- Remember: An element is the _____ form of matter
- Ex. Water (H_2O) is made of _____ atoms of the element _____ (H) and _____ atom of the element _____ (O)

The Discovery of Atomic Structure

400 BC - Democritus

- First to _____ the atom

1803 - John Dalton's Solid Sphere model

- Atom is a _____ that can't get any smaller
- Elements are made of atoms that all have the same _____ and _____ are atoms of different elements combined

1869 - Dmitri Mendeleev

- Developed the first _____ of elements, organized by _____

1904 - JJ Thomson Plum Pudding Model

- The atom is _____
- It is a _____ charged _____ with negative _____ embedded throughout

1911 - Ernest Rutherford Nuclear Model

- _____ experiment
- The _____ of the atom and its positively charged particles were in the _____, with low mass negatively charged particles _____ it

1913 - Henry Moseley

- Discovered the number of _____ is unique to each element (atomic number) and _____ the Periodic Table this way 3

1913 (continued)

Niels Bohr Bohr Model

- _____ are negative particles that travel in fixed _____ around the positively charged _____ that is made of positive _____ and neutral neutrons

1926 - Schrodinger and Heisenberg Electron Cloud model

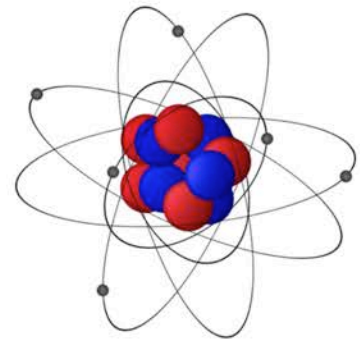
- The nucleus is surrounded by an _____ that is divided into _____, but electrons do not travel in fixed orbits

Summary of the Structure

Two parts to the atom:

Nucleus

- Dense _____
- Made of _____ and neutrons
- _____ charged
- Where the _____ of the atom is located



Electron cloud

- _____ surrounding the nucleus
- Broken down into regions of space called “ _____ ” or “ _____ ”
 - Electrons in shells _____ from the nucleus have the _____ energy
 - Electrons in the _____ energy level are called _____ electrons
- _____ charged
- Where the _____ of the atom is located

Subatomic particles

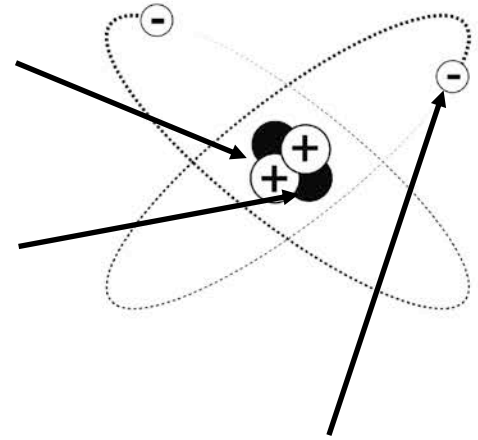
Proton (p^+): _____

particle in the nucleus

Neutron (n^0): _____

particle in the nucleus with

Electron (e^-): _____ particle outside of the nucleus in the



What holds it together?

- Forces:

- _____ force between the (+) nucleus and (-)

- *Remember* _____ *electrical charges attract*

- This is what holds the atom _____

- _____ force between (-) electrons

- *Electrons want to be as* _____ *from each other as possible*

- What gives the electron cloud _____

- Repulsive force between (+) _____

- *Protons want to be as far apart from each other as possible*

- An insane amount of _____ holds the nucleus together because of this

Summary Concept 1