

Name: _____

Date: _____ Core: _____

Guided Notes- Atoms

What is an Atom?

- Atoms are _____
- EVERYTHING is made up of _____ of atoms
- Atoms are made up of a _____ (at its center) and an _____ (surrounding the nucleus)

Subatomic Particles

- Sub= under (think submarine)
- Subatomic particles are the smaller parts that make up an atom
- Atoms are made up of 3 different subatomic particles
 - _____
 - _____
 - _____

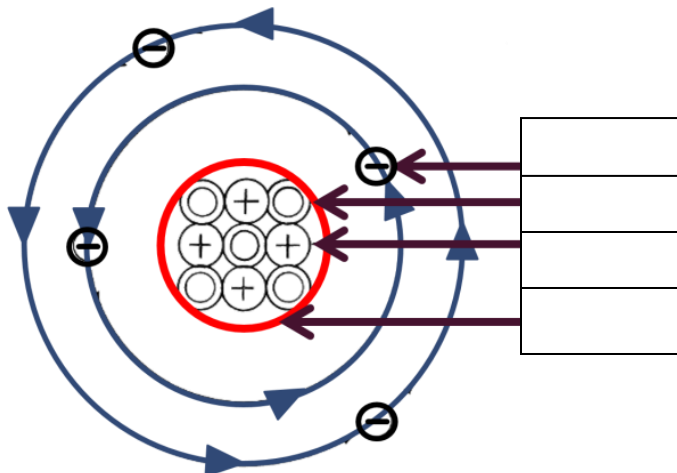
The Three Subatomic Particles

- _____ - **positively charged (+)**, found IN the nucleus; mass of 1 atomic mass unit (amu)
- _____ - **no charge (0)**, found in the nucleus; mass of 1amu
- _____ - **negatively charged (-)**, found in the **electron cloud**, much smaller than protons and neutrons (mass \ll 1 amu)

Electron Cloud Theory

- Modern Atomic Theory (the theory we use to explain the structure of atoms) is called _____
- Says that an atom has a nucleus surrounded by an “electron cloud” that has different _____ (layers) and that each can hold a different number of _____ and electrons fill layers _____ first

What we think Atoms Look like today



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Why is it an Electron "Cloud"?

- Electrons orbit the nucleus _____ - they _____ have an exact spot like planets orbiting the sun but instead move around their level

Valence Electrons

- Valence electrons are found _____ of the electron cloud- they're on the _____ of the cloud
- These are the **ONLY** electrons involved in _____
- Valence electrons determine...
 - _____
 - _____ - the ability of an atom to chemically react with another atom

Valence Electron Pairings

- _____ is the magic number- if there are _____ valence electrons (electrons in the outermost energy level) the atom is _____ and **doesn't want to react** with other atoms
- Hydrogen (H), helium (He), lithium (Li), and beryllium (Be) are the exceptions. They only need _____ electrons to be stable

Where the Valence Shell is

