

SOL Tutoring

Background on new SOL test

<u>Topic</u>	<u># of questions</u>
Scientific Investigation	10
Atomic Structure/Periodicity	8
Chemical Formulas & Reactions (aka Nomenclature)	16
Molar Relationships	8
Phases of Matter + KMT	8
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	50 graded
	+ 10 field
	<hr/>
	60 questions

Atomic Structure

Protons = the Atomic Number

Neutrons = (vary the # = isotope) = Mass # - Atomic #


Electrons = (vary the # = ions) = if neutral # electrons = Atomic #

if charged then # electrons = charge - # protons

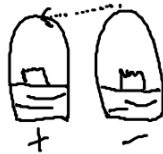
if an atom loses e^- it will have a \oplus charge = cation

if an atom gains e^- it will have a \ominus charge = anion

John "Daddy" Dalton - Father of The Atomic theory of Matter

 thought atom was solid sphere.

JJ Thompson (Tubes)



named the electron

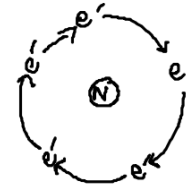
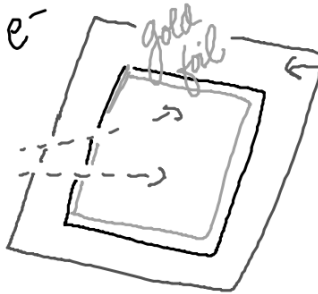


plum pudding model

Robert Millikan used oil can not milk can to prove the size & charge of the e^-

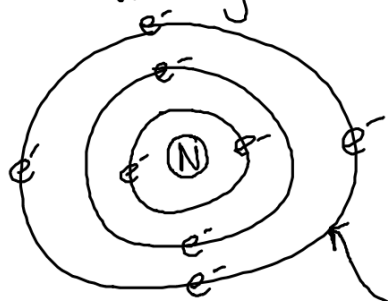
Ernest Rutherford

Atom is almost complete empty space with a positive small nucleus.



Nuclear model

Neils Bohr- Bohr-ring - discovered the energy levels through work with light waves. He gave the letter "n" to represent energy levels.



planetary model

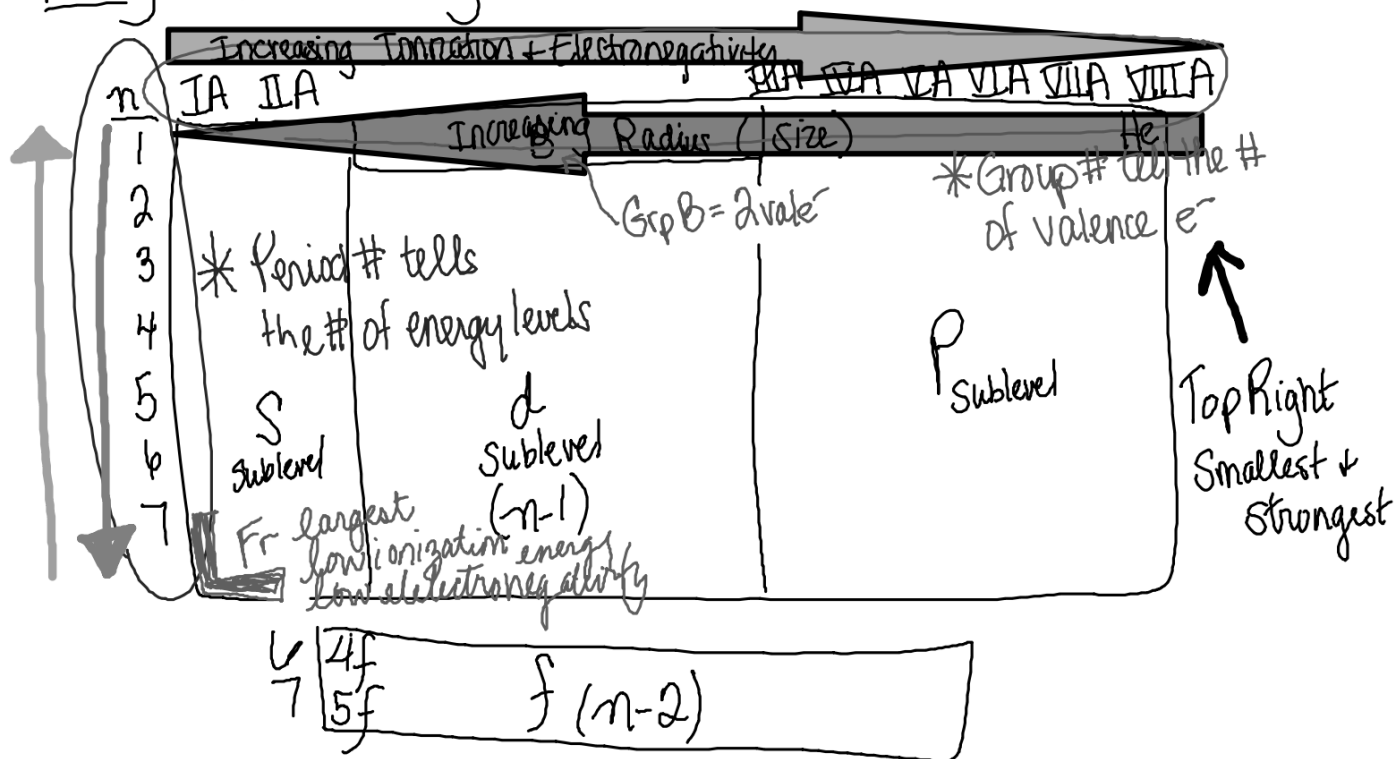
outermost energy level = valence

valence e^- are involved in bonding

Octet Rule = atoms will lose, gain or share e^- to obtain a valence shell with $8e^-$

Mendeleev - created 1st periodic table - arranged by mass & character

Moseley - re ordered by atomic # (Modern Periodic Law)

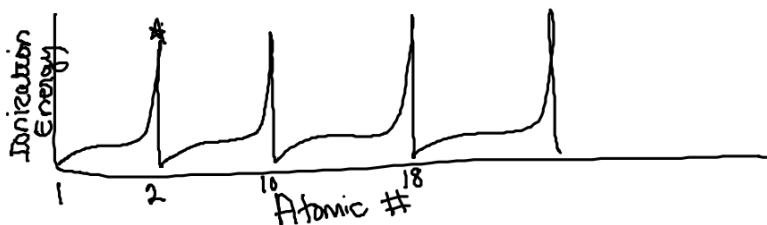


Ionization Energy - the energy required to remove the most loosely held (outermost) e^-

metals = very low

non-metals = very high

noble gases = extremely high



Electronegativity: an atom's attraction to the e^- shared in a covalent bond.

metals = very low

non-metals = very high

noble gases = No value



website: zadosci.com

look under SOL Review link