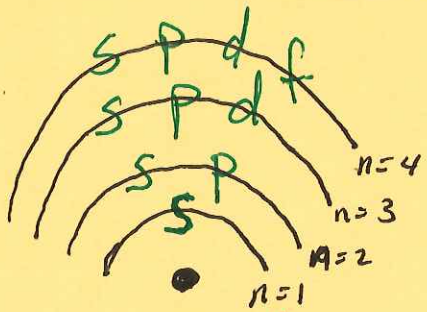
Intro to Electron Configurations



"n" denotes energy level

Electron configurations - address for electrons

* electron location determines how/why elements act or react the way that they do

Will show us energy level, sublevel, and how many electrons are in any particular location within an element

Sublevels - subdivide or break down each energy level into sub categories / sub-energy levels

1st energy level (n=1) will only have s sublevel

2nd energy level (n=2) will have both s and p sublevel

3rd energy level (n=3) will have s, p, d sublevels

4th energy level (n=4) will have s, p, d, f sublevels

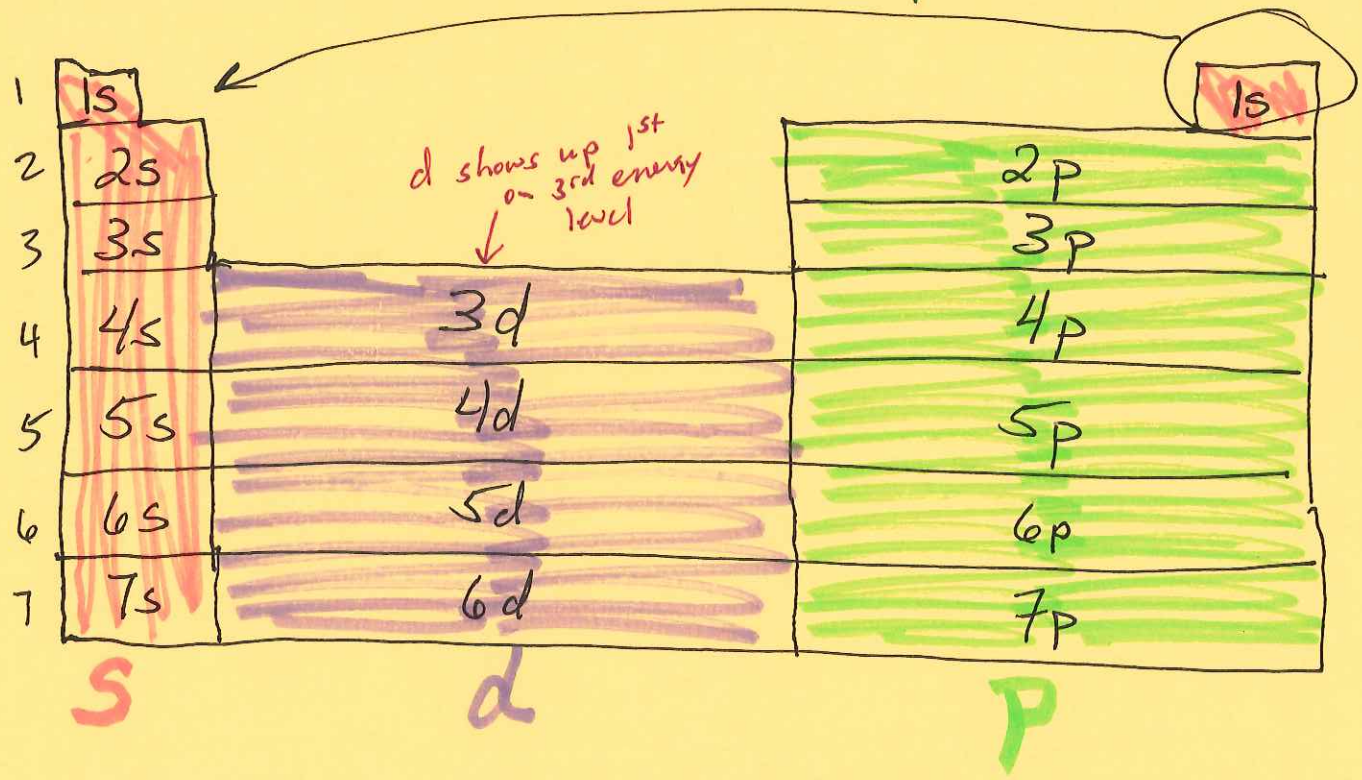
Notice that for each new ~~sub~~ energy level a new sublevel is introduced

s sublevel appears 1st on n=1 ~~the~~ energy level

p sublevel appears 1st on n=2 energy level

(*) d sublevel appears 1st on n=3 energy level

(*) → watch out for this one ...



"d" sublevels ALWAYS trail by 1 energy level

↳ 1st d sublevel in 4th period but found on 3rd energy level

Read the periodic table just like a Book ...

(*) Top to Bottom, Left to Right, read all the way to the end of a line before going to next

(*) Lowest energy level is 1s ! (*)

sublevels in order of Energy (Low to high)

1s → 2s → 2p → 3s → 3p → 4s → 3d → 4p → 5s → 4d ...

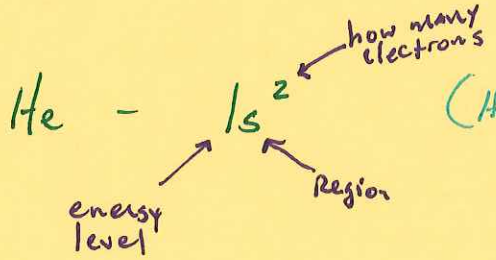
* # of elements across for a region coincide with how many (maximum) electrons will fit there

S Region – 2 e⁻ max

P Region – 6 e⁻ max

d Region – 10 e⁻ max

Rule → All of your sublevels will be full with the maximum # of electrons except maybe for the last one



He – $1s^2$ (He in 1s region, second element there)

C – $1s^2\ 2s^2\ 2p^2$ (notice p region not full BUT all sublevels before area full)

Mg – $1s^2\ 2s^2\ 2p^6\ \boxed{3s^2}$ ← Last one always directly relates to where the element is on the periodic table!

exponents add up to total electrons that should be present (35) ⟹

Br – $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 3d^{10}\ 4p^5$

Remember "d" region always trails 1 energy level

Remember: All lower energy levels must be filled before higher energy levels get electrons