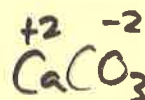
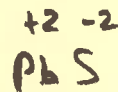


# Bonding Day 2 4-8

Why Bond? - to fulfill "octet" requirement (8)  
 - to lower their potential energy

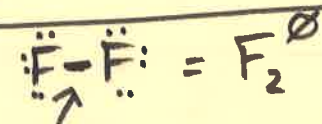
$\Delta EN$  determine bond type

0-0.3	NPC
0.4-1.7	PC
1.7+	I



## Covalent

- e<sup>-</sup> sharing

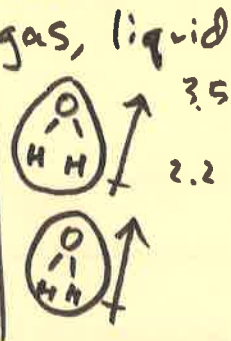


2 shared e<sup>-</sup>  
(single bond)

- form molecules - neutral



↑ ↑  
no attraction



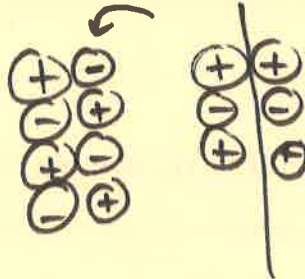
- gas, liquid

## Ionic

- e<sup>-</sup> transfer forming (+, - ions)

- ions attract to form crystal lattice

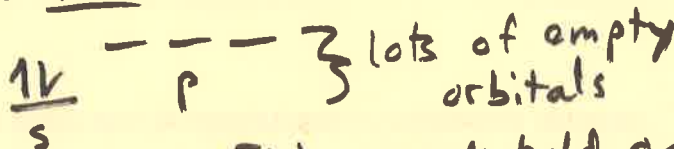
- Solid at room temp but brittle



## Metallic Bonding

- in solid, neutral metals

- metals have few valence e<sup>-</sup>s



- metals have low EN - weak hold on valence e<sup>-</sup>s

- ve<sup>-</sup> are delocalized, jump from nuclei to nuclei

"Sea of electrons"

- ve<sup>-</sup> act like glue, holding nuclei together

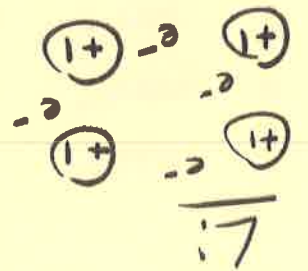


increases = stronger metallic bond

Heat of Vaporization

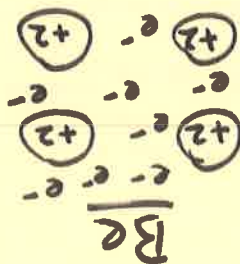
145 kJ/mol

- small amt.



292 kJ/mol

- more



490 kJ/mol

- most

