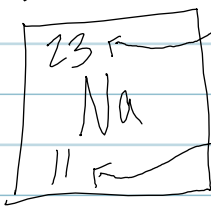


# Chapter 2 ~ Chemistry

Matter: Elements & Compounds

(Atoms ~> Compounds)  
(Emergent)



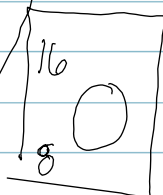
Mass: Neutrons + Protons  
 $23 = 12 + 11$

$23 = N + P$   
 $23 = 12 + 11$

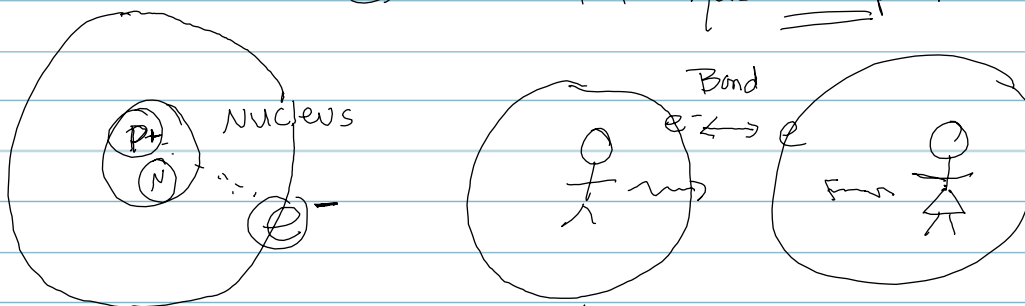
Number: Protons

|                                  |   |  |
|----------------------------------|---|--|
| Neutrons<br>No charge<br>Isotope | Protons *<br>* Positive Charge<br>Determines <u>Element</u> | * <u>Electrons</u><br>Negative charge<br>outer shells.<br>* Chemical RxN |
|----------------------------------|---|--|

Element that has 8 protons !!



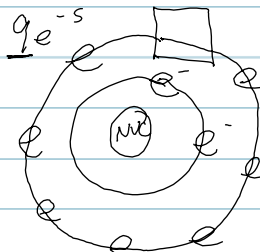
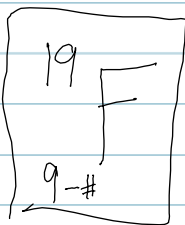
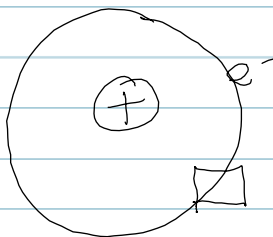
1. gas
2. colorless
3. mass 16 amu



\* 1st shell =  $2e^-$  \*  
\* 2nd shell =  $8e^-$  (octet rule)  
Stability = full shell

find # Electrons  
~ Neutral ( $+ / - = 0$ )  
Na 11 protons + 11 electrons = 0  
 $\begin{matrix} 16 \\ 8 \text{ O} \end{matrix} = \text{pro: } 8 \text{ elec: } 8$

Electrons:  $\begin{matrix} 1 \\ \text{H} \\ 1 \end{matrix} \rightarrow 1p \ 1e$



Bonding  
stable  
take/give electron