

1a. Ion formation: fill out this chart:

Element	Metal or nonmetal?	Change in electrons when ion is formed	ion symbol	ion name
Mg	_____	_____	Mg ⁺²	_____
Cl	_____	_____	Cl ⁻¹	_____
Na	_____	loses 1 electron	_____	_____
N	_____	gains 3 electrons	_____	_____
Zn	_____	_____	Zn ⁺²	_____
S	_____	_____	S ⁻²	_____
P	_____	_____	P ⁻³	_____
K	_____	_____	K ⁺¹	_____
Al	_____	loses 3 electrons	_____	_____
O	_____	gains 2 electrons	_____	_____
Ca	_____	_____	Ca ⁺²	_____
F	_____	_____	F ⁻¹	_____

1b. Circle the correct **words**: (Hint: **Cats** are good, therefore **cati**ons are positive!)

Metals tend to *lose/gain* electrons to become *positive/negative* ions called *cations/anions*.

Nonmetals tend to *lose/gain* electrons to become *positive/negative* ions called *cations/anions*.

2. Fill out the missing numbers or symbols for the atoms or ions in this chart.

(Don't assume that the protons and electrons are equal or that these are the most common isotopes)

	Symbol	# of electrons	# of neutrons	Mass #	# protons	Charge
a.	²⁰⁸ Pb ⁺⁴	_____	_____	_____	_____	_____
b.	³¹ P ⁻³	_____	_____	_____	_____	_____
c.	⁵⁶ Fe ⁰	_____	_____	_____	_____	_____
d.	_____	54	_____	131	_____	-1
e.	²³⁵ U ⁺⁶	_____	_____	_____	_____	_____
f.	_____	10	14	_____	_____	+3
g.	Si ⁻⁴	_____	14	_____	_____	_____
h.	_____	36	_____	90	38	_____

3. Notes and Demos: Formation of ionic compounds.

4) Combine the ions to form neutral compounds.

Show a-f in picture form:

	Cl^{-1}	SO_4^{-2}	N^{-3}	OH^{-1}	PO_4^{-3}	CO_3^{-2}	$\text{C}_2\text{H}_3\text{O}_2^{-1}$
Na^{+1}	(a)	(b)					
Ca^{+2}			(c)	(d)			
Fe^{+3}							
Mg^{+2}					(e)		
NH_4^{+1}							
Al^{+3}				(f)			

(a)

(b)

(c)

(d)

(e)

(f)