

The Quiz this week is on Thursday.  
There is no school for students Friday

**Purpose:**

What do metals do when they run into non-metals?

**WARMUP :**

In Period 2 there are eight elements

In Group 2 there are SIX elements

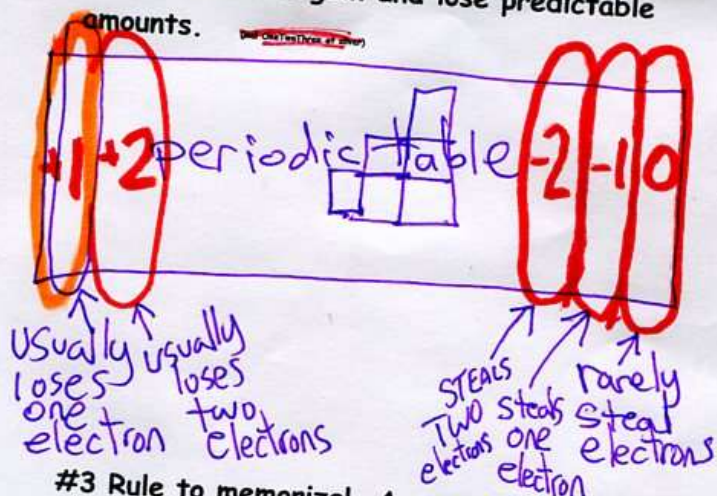
#1

**LOSERS!** metals, when touching nonmetals, will lose electrons

**THIEFS!** nonmetals, when touching metals, will gain electrons

#2

A few elements gain and lose predictable amounts.



#3 Rule to memorize! A compound must always have a total charge of zero.

left page!!

Draw cartoons of what would form

	$Al^{3+}$	$Ba^{2+}$
$N^{3-}$	$N^{3-} Al^{3+}$ AlN Aluminum Nitride	$Ba^{2+}$
$O^{2-}$		

Now write the formulas in each box

Memorize which parts of the periodic table have known charges when they make ions.

Including these yellow squares

Handwritten annotations on the periodic table:

- Halogens** (Group 17): -1
- Group 16**: -2
- Group 15**: -3
- Noble gases** (Group 18)
- Hydrogen** (Group 1): H

0	11	12	13	14	15	16	17	18	
				<b>[H]</b>				2 He helium 4.00	
				5 B boron 10.81	6 C carbon 12.01	7 N nitrogen 14.01	8 O oxygen 16.00	9 F fluorine 19.00	10 Ne neon 20.18
				13 Al aluminum 26.98	14 Si silicon 28.09	15 P phosphorus 30.97	16 S sulfur 32.06	17 Cl chlorine 35.45	18 Ar argon 39.95
8 II kal 71	29 Cu copper 63.55	<b>+2</b> 30 Zn zinc 65.38	<b>+3</b> 31 Ga gallium 69.72	32 Ge germanium 72.59	33 As arsenic 74.92	34 Se selenium 78.96	35 Br bromine 79.90	36 Kr krypton 83.80	
6 d dium 54	<b>+1</b> 47 Ag silver 107.87	<b>+2</b> 48 Cd cadmium 112.40	<b>+3</b> 49 In indium 114.82	50 Sn tin 118.69	51 Sb antimony 121.75	52 Te tellurium 127.60	53 I iodine 126.90	54 Xe xenon 131.30	
8 t ium 09	79 Au gold 196.97	80 Hg mercury 200.59	81 Tl thallium 204.37	82 Pb lead 207.2	83 Bi bismuth 208.98	84 Po polonium (210)	85 At astatine (210)	86 Rn radon (222)	
0 s ium 9)	111 Rg roentgenium (272)	112 Cn copernicium (277)	113 Uut ununtrium (284)	114 Uuq ununquadium (289)	115 Uup ununpentium (288)	116 Uuh ununhexium (291)	117 Uus ununseptium (293)	118 Uuo ununoctium (294)	
1 1	64 Gd gadolinium	65 Tb terbium	66 Dy dysprosium	67 Ho holmium	68 Er erbium	69 Tm thulium	70 Yb ytterbium	71 Lu lutetium	



1/29/2016/ 7:55 AM

6 7 8 9 10 11 12 13 14 15 16 17 18

**Halogens**

**Nobel gases**

														2 He helium 4.00
					5 B boron 10.81	6 C carbon 12.01	7 N nitrogen 14.01	8 O oxygen 16.00	9 F fluorine 19.00	10 Ne neon 20.18				
					+3 13 Al aluminum 26.98	14 Si silicon 28.09	15 P phosphorus 30.97	16 S sulfur 32.06	17 Cl chlorine 35.45	18 Ar argon 39.95				
24 Cr chromium 52.00	25 Mn manganese 54.94	26 Fe iron 55.85	27 Co cobalt 58.93	28 Ni nickel 58.71	29 Cu copper 63.55	+2 30 Zn zinc 65.38	+3 31 Ga gallium 69.72	32 Ge germanium 72.59	33 As arsenic 74.92	34 Se selenium 78.96	35 Br bromine 79.90	36 Kr krypton 83.80		
42 Mo molybdenum 95.94	43 Tc technetium (99)	44 Ru ruthenium 101.07	45 Rh rhodium 102.91	46 Pd palladium 106.4	+1 47 Ag silver 107.87	+2 48 Cd cadmium 112.40	+3 49 In indium 114.82	50 Sn tin 118.69	51 Sb antimony 121.75	52 Te tellurium 127.60	53 I iodine 126.90	54 Xe xenon 131.30		
74 W tungsten 183.85	75 Re rhenium 186.2	76 Os osmium 190.2	77 Ir iridium 192.22	78 Pt platinum 195.09	79 Au gold 196.97	80 Hg mercury 200.59	81 Tl thallium 204.37	82 Pb lead 207.2	83 Bi bismuth 208.98	84 Po polonium (210)	85 At astatine (210)	86 Rn radon (222)		
106 Sg seaborgium (263)	107 Bh bohrium (262)	108 Hn hahnium (265)	109 Mt meitnerium (266)	110 Ds darmstadtium (269)	111 Rg roentgenium (272)	112 Cn copernicium (277)	113 Uut ununtrium (284)	114 Uuq ununquadium (289)	115 Uup ununpentium (288)	116 Uuh ununhexium (291)	117 Uus ununseptium (293)	118 Uuo ununoctium (294)		
59 Pr praseodymium 140.91	60 Nd neodymium 144.24	61 Pm promethium (145)	62 Sm samarium 150.4	63 Eu europium 151.96	64 Gd gadolinium 157.25	65 Tb terbium 158.93	66 Dy dysprosium 162.50	67 Ho holmium 164.93	68 Er erbium 167.26	69 Tm thulium 168.93	70 Yb ytterbium 173.04	71 Lu lutetium 175.97		
91 Pa protactinium 231.04	92 U uranium 238.03	93 Np neptunium 237.05	94 Pu plutonium (242)	95 Am americium (243)	96 Cm curium (247)	97 Bk berkelium (247)	98 Cf californium (251)	99 Es einsteinium (252)	100 Fm fermium (257)	101 Md mendelevium (258)	102 No nobelium (255)	103 Lr lawrencium (257)		

*+1 alkali metal*

*+2 alkaline Earth metals*

1 H hydrogen 1.01	2	3	4	5	6	7	8	9	10	11
3 Li lithium 6.94	4 Be beryllium 9.01									
11 Na sodium 23.00	12 Mg magnesium 24.31									
19 K potassium 39.10	20 Ca calcium 40.08	21 Sc scandium 44.96	22 Ti titanium 47.90	23 V vanadium 50.94	24 Cr chromium 52.00	25 Mn manganese 54.94	26 Fe iron 55.85	27 Co cobalt 58.93	28 Ni nickel 58.71	29 Cu copper 63.55
37 Rb rubidium 85.47	38 Sr strontium 87.62	39 Y yttrium 88.91	40 Zr zirconium 91.22	41 Nb niobium 92.91	42 Mo molybdenum 95.94	43 Tc technetium (99)	44 Ru ruthenium 101.07	45 Rh rhodium 102.91	46 Pd palladium 106.4	47 Ag silver 107.87
55 Cs cesium 132.91	56 Ba barium 137.34	57 La lanthanum 138.91	72 Hf hafnium 178.49	73 Ta tantalum 180.95	74 W tungsten 183.85	75 Re rhenium 186.2	76 Os osmium 190.2	77 Ir iridium 192.22	78 Pt platinum 195.09	79 Au gold 196.97
87 Fr francium (223)	88 Ra radium 226.03	89 Ac actinium (227)	104 Rf rutherfordium (261)	105 Db dubnium (262)	106 Sg seaborgium (263)	107 Bh bohrium (262)	108 Hn hahnium (265)	109 Mt meitnerium (266)	110 Ds darmstadtium (269)	111 Rg roentgenium (272)

58 Ce cerium 140.12	59 Pr praseodymium 140.91	60 Nd neodymium 144.24	61 Pm promethium (145)	62 Sm samarium 150.4	63 Eu europium 151.96	64 Gd gadolinium 157.25
------------------------------	------------------------------------	---------------------------------	---------------------------------	-------------------------------	--------------------------------	----------------------------------

90 Th thorium 232.04	91 Pa protactinium 231.04	92 U uranium 238.03	93 Np neptunium 237.05	94 Pu plutonium (242)	95 Am americium (243)	96 Cm curium (247)
-------------------------------	------------------------------------	------------------------------	---------------------------------	--------------------------------	--------------------------------	-----------------------------

Atomic Masses to .01. !