

VE: 1 | 2 |

| 3 | 4 | 5 | 6 | 7 | 8

PERIODIC TABLE OF THE ELEMENTS																			
+1	+2	Legend												+3	+/-4	-3	-2	-1	0
1 H 1.01	2 He 4.00	Atomic Number: 1 Element Name: H Element Symbol: H Average Atomic Mass: 1.01												3 B 10.81	4 C 12.01	5 N 14.01	6 O 16.01	7 F 18.99	8 Ne 20.18
3 Li 6.94	4 Be 9.01													9 B 10.81	10 C 12.01	11 N 14.01	12 O 16.01	13 F 18.99	14 Ne 20.18
5 Na 22.99	6 Mg 24.31													13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.06	17 Cl 35.45	18 Ar 39.95
19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.87	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.93	28 Ni 58.69	29 Cu 63.55	30 Zn 65.38	31 Ga 69.72	32 Ge 72.63	33 As 74.92	34 Se 78.97	35 Br 79.90	36 Kr 83.80		
37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	43 Tc 98.91	44 Ru 101.07	45 Rh 102.91	46 Pd 106.42	47 Ag 107.87	48 Cd 112.41	49 In 114.82	50 Sn 118.71	51 Sb 121.76	52 Te 127.60	53 I 126.90	54 Xe 131.29		
55 Cs 132.91	56 Ba 137.33	89-103		72 Hf 178.49	73 Ta 180.95	74 W 183.84	75 Re 186.21	76 Os 190.23	77 Ir 192.22	78 Pt 195.08	79 Au 196.97	80 Hg 200.59	81 Tl 204.38	82 Pb 207.2	83 Bi 208.98	84 Po (209)	85 At (210)	86 Rn (222)	
87 Fr (223)	88 Ra (226)	89-103		104 Rf (261)	105 Db (262)	106 Sg (266)	107 Bh (264)	108 Hs (277)	109 Mt (268)	110 Ds (271)	111 Rg (282)	112 Cn (285)	113 Nh (286)	114 Fl (289)	115 Mc (290)	116 Lv (293)	117 Ts (294)	118 Og (294)	
57 La 138.91	58 Ce 140.12	59 Pr 140.91	60 Nd 144.24	61 Pm (145)	62 Sm 150.36	63 Eu 151.96	64 Gd 157.25	65 Tb 158.93	66 Dy 162.50	67 Ho 164.93	68 Er 167.26	69 Tm 168.93	70 Yb 173.05	71 Lu 174.97					
89 Ac (227)	90 Th 232.04	91 Pa 231.04	92 U 238.03	93 Np (237)	94 Pu (244)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (252)	100 Fm (257)	101 Md (258)	102 No (259)	103 Lr (262)					

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Group Name	Group Description
Alkali metals	_____ Valence Electrons (VE) - These elements will _____ when they react with a nonmetal to become a _____ - These elements are your _____
Alkaline earth metals	_____ Valence electrons (VE) - These elements will _____ when they react with a nonmetal to become a _____ - These elements are your _____
Halogens	_____ Valence electrons (VE) - These elements will _____ when they react with a metal to become a _____ - These elements are your _____
Noble Gasses	_____ Valence electrons (VE) - These elements are _____ meaning that they _____

Note that Valence electrons (VE) are electrons in the _____ energy level of your bohr diagram. If we lose these electrons we form a + ion. If we gain these electrons, we form a - ion.

Group #	1	2	13	14	15	16	17	18
# of VE								
Ion Charge								

| 3 | 4 | 5 | 6 | 7 | 8

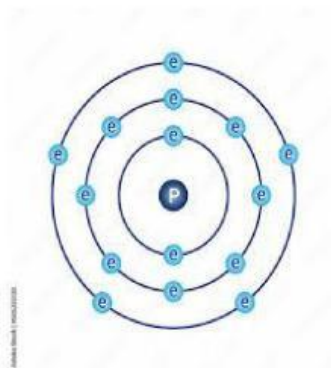
+1 1		+2												+3		+/-4	-3	-2	-1	0 18
1 H Hydrogen 1.01																				2 He Helium 4.00
3 Li Lithium 6.94	4 Be Beryllium 9.01											13 B Boron 10.81	14 C Carbon 12.01	15 N Nitrogen 14.01	16 O Oxygen 16.00	17 F Fluorine 19.00	18 Ne Neon 20.18			
11 Na Sodium 22.99	12 Mg Magnesium 24.31											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			
19 K Potassium 39.10	20 Ca Calcium 40.08	21 Sc Scandium 44.96	22 Ti Titanium 47.87	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 58.69	29 Cu Copper 63.55	30 Zn Zinc 65.38	31 Ga Gallium 69.72	32 Ge Germanium 72.63	33 As Arsenic 74.92	34 Se Selenium 78.97	35 Br Bromine 79.90	36 Kr Krypton 83.80			
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 95.95	43 Tc Technetium (97)	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.91	46 Pd Palladium 106.42	47 Ag Silver 107.87	48 Cd Cadmium 112.41	49 In Indium 114.82	50 Sn Tin 118.71	51 Sb Antimony 121.76	52 Te Tellurium 127.60	53 I Iodine 126.90	54 Xe Xenon 131.29			
55 Cs Cesium 132.91	56 Ba Barium 137.33	57-71		72 Hf Hafnium 178.49	73 Ta Tantalum 180.95	74 W Tungsten 183.84	75 Re Rhenium 186.21	76 Os Osmium 190.23	77 Ir Iridium 192.22	78 Pt Platinum 195.08	79 Au Gold 196.97	80 Hg Mercury 200.59	81 Tl Thallium 204.38	82 Pb Lead 207.2	83 Bi Bismuth 208.98	84 Po Polonium (209)	85 At Astatine (210)	86 Rn Radon (222)		
87 Fr Francium (223)	88 Ra Radium (226)	89-103		104 Rf Rutherfordium (261)	105 Db Dubnium (268)	106 Sg Seaborgium (269)	107 Bh Bohrium (270)	108 Hs Hassium (277)	109 Mt Meitnerium (277)	110 Ds Darmstadtium (281)	111 Rg Roentgenium (282)	112 Cn Copernicium (285)	113 Nh Nihonium (286)	114 Fl Flerovium (289)	115 Mc Moscovium (290)	116 Lv Livermorium (293)	117 Ts Tennessine (294)	118 Og Oganesson (294)		

57 La Lanthanum 138.91	58 Ce Cerium 140.12	59 Pr Praseodymium 140.91	60 Nd Neodymium 144.24	61 Pm Promethium (145)	62 Sm Samarium 150.36	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 173.05	71 Lu Lutetium 174.97
89 Ac Actinium 227.03	90 Th Thorium 232.04	91 Pa Protactinium 231.04	92 U Uranium 238.03	93 Np Neptunium 237.05	94 Pu Plutonium 244.06	95 Am Americium 243.06	96 Cm Curium 247.07	97 Bk Berkelium 247.07	98 Cf Californium 251.08	99 Es Einsteinium 252.08	100 Fm Fermium 257.10	101 Md Mendelevium 258.10	102 No Nobelium 259.10	103 Lr Lawrencium 262.10

The element Al is in group _____ and Period _____ and has _____ valence electrons. An element that would react similarly to Al would be _____ because they have the _____. Al will react by _____ to form a _____.



I can see that Na has _____ electrons in total. The number of valence electrons for this atom is _____ and I can see that this element is in group 1. In order to have a full outer shell and be stable like the noble gasses, Na needs to _____ to become a _____. All elements in this _____ will react this way to become stable.



Location of Phosphorus in the Periodic Table

I can see that P has _____ electrons in total. The number of valence electrons for this atom is _____ and I can see that this element is in group 15. In order to have a full outer shell and be stable like the noble gasses, P needs to _____ to become a _____. All elements in this _____ will react this way to become stable.

H•							He•
Li•	Be•	B•	C•	N•	O•	F•	Ne•
Na•	Mg•	Al•	Si•	P•	S•	Cl•	Ar•
K•	Ca•	Ga•	Ge•	As•	Se•	Br•	Kr•
Rb•	Sr•	In•	Sn•	Sb•	Te•	I•	Xe•
Cs•	Ba•	Tl•	Pb•	Bi•	Po•	At•	Rn•
Fr•	Ra•						

Based on the image shown to the left, I can see that elements in each group have the same number of _____.

Group 1 → 1 ve Group 15 → 5 ve
Group 2 → 2 ve Group 16 → 6 ve
Group 13 → 3 ve Group 17 → 7 ve
Group 14 → 4 ve Group 18 → 8 ve

(Except He has 2ve)

Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

- Metals have _____ Melting points
- Metals have _____ Boiling points
- Metals are _____ conductors of heat and electricity
- Metals will _____ electrons to form _____ when they react.
- Metals are _____ at room temperature.
- Metals have luster which means they are shiny
- Metals are _____

- Nonmetals have _____ Melting points
- Nonmetals have _____ Boiling points
- Nonmetals are _____ conductors of heat and electricity
- Nonmetals will _____ electrons to form _____ when they react.
- Nonmetals are _____ at room temperature.
- Nonmetals are dull in appearance
- Nonmetals are _____

- Metalloids are great _____ which is why we use them in computer chips, transistors, and solar panels.