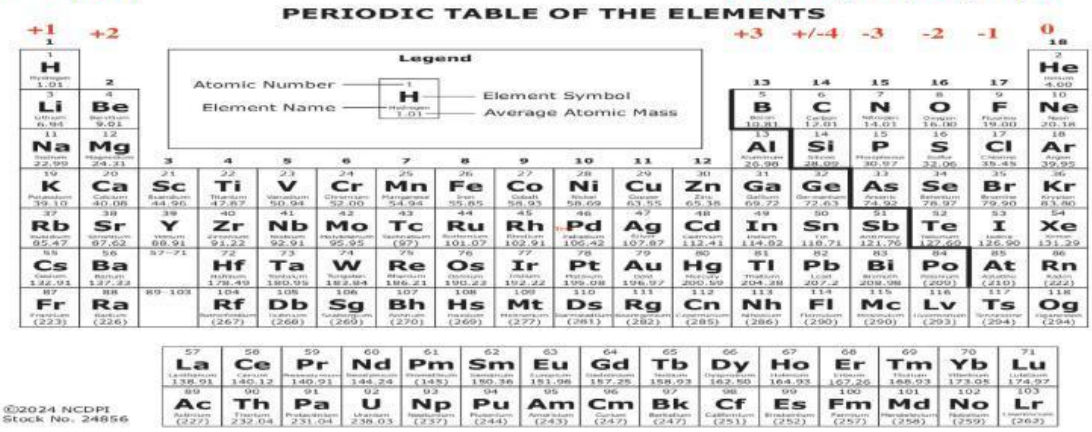
VE: 1 | 2 | | 3 | 4 | 5 | 6 | 7 | 8



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								

LIVEWORKSHEETS

VE: 1 | 2 | | 3 | 4 | 5 | 6 | 7 | 8

PERIODIC TABLE OF THE ELEMENTS

+1 +2 +3 +/-4 -3 -2 -1 0

Legend

Atomic Number — 1
Element Name — Hydrogen
Element Symbol — H
Average Atomic Mass — 1.01

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 H Hydrogen 1.01																	2 He Helium 4.00
3 Li Lithium 6.94	4 Be Beryllium 9.01											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
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 (267)	105 Db Dubnium (268)	106 Sg Seaborgium (269)	107 Bh Bohrium (270)	108 Hs Hassium (269)	109 Mt Meitnerium (277)	110 Ds Darmstadtium (281)	111 Rg Roentgenium (282)	112 Cn Copernicium (285)	113 Nh Nihonium (286)	114 Fl Flerovium (290)	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)	90 Th Thorium 232.04	91 Pa Protactinium 231.04	92 U Uranium 238.03	93 Np Neptunium (237)	94 Pu Plutonium (244)	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 (259)	103 Lr Lawrencium (262)

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

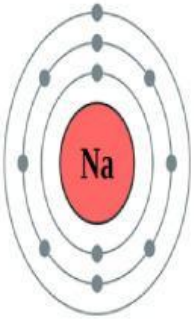
The element Mg is in group _____ and Period _____ and has _____ valence electrons. An element that would react similarly to Mg would be _____ because they have the _____. Mg will react by _____ to form a _____.

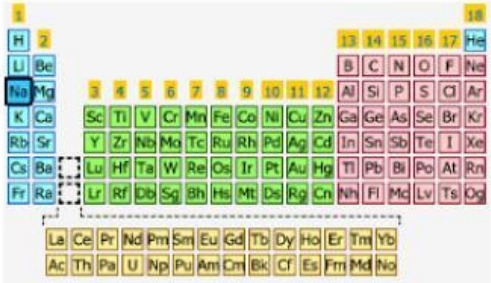
The element As is in group _____ and Period _____ and has _____ valence electrons. An element that would react similarly to As would be _____ because they have the _____. As will react by _____ to form a _____.

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

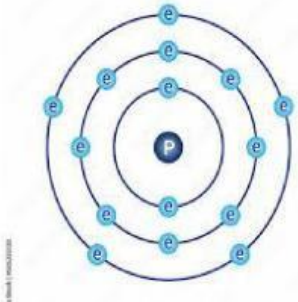
The element Al is in group _____ and Period _____ and has _____ valence electrons. An element that would react similarly to Al would be _____ because they have the _____. Al will react by _____ to form a _____.

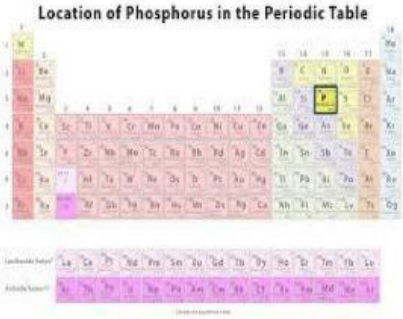
LIVEWORKSHEETS



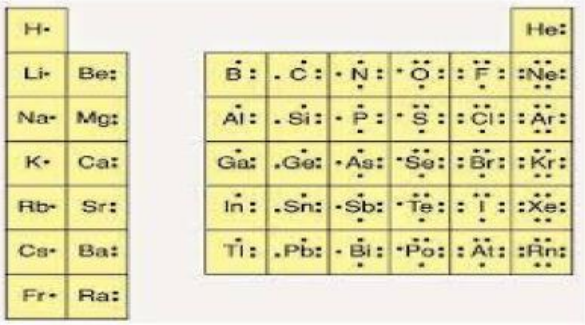


I can see that Na has _____ electrons in total. The number of valence electrons for this atom is _____ and I can see that this element is in group 1. In order to have a full outer shell and be stable like the noble gasses, Na needs to _____ to become a _____. All elements in this _____ will react this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





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.



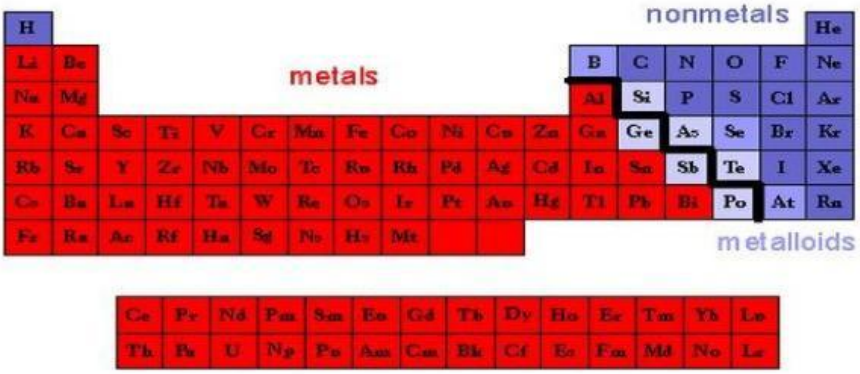
Based on the image shown to the left, I can see that elements in each group have the same number of _____.

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

(Except He has 2ve)

LIVEWORKSHEETS

Metals, Nonmetals, and Metalloids



From the image above, we can see that metals are found on the _____ side of the staircase with the exception of the element _____.

- 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 _____

From the image above, we can see that nonmetals are found on the _____ side of the staircase.

- 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 _____

We can see that metalloids are the elements that are touching the staircase with the exception of the metal _____.

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

LIVEWORKSHEETS