

VE: 1 | 2 |

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

PERIODIC TABLE OF THE ELEMENTS

+1	+2													+3	+/-4	-3	-2	-1	0
1 H Hydrogen 1.008 1	2 Be Boron 9.012 4	3 Li Lithium 6.941 3	4 Be Boron 9.012 4	5 Sc Scandium 24.95 13	6 Ti Titanium 47.87 22	7 V Vanadium 50.94 23	8 Cr Chromium 52.00 24	9 Mn Manganese 54.94 25	10 Fe Iron 55.85 26	11 Co Cobalt 58.93 27	12 Ni Nickel 58.69 28	13 Cu Copper 63.55 29	14 Zn Zinc 65.38 30	15 Ga Gallium 69.72 31	16 Ge Germanium 72.63 32	17 As Arsenic 74.92 33	18 Se Selenium 78.92 34	19 Br Bromine 80.90 35	20 He Helium 10.01 10
Na Sodium 22.99 11	Mg Magnesium 24.31 12	Rb Rubidium 85.47 38	Sr Strontium 87.62 39	Zr Zirconium 91.22 40	Nb Niobium 92.91 41	Mo Molybdenum 95.95 42	Tc Technetium (97) 43	Ru Ruthenium 103.07 44	Rh Rhodium 103.91 45	Pd Palladium 107.42 46	Ag Silver 107.67 47	Cd Cadmium 114.49 48	In Indium 115.73 49	Sn Tin 118.76 50	Sb Antimony 121.76 51	Te Tellurium 126.90 52	I Iodine 126.90 53	Xe Xenon 131.29 54	
Cs Cesium 132.91 39	Ba Barium 137.33 32	Hf Hafnium 178.49 46	Ta Tantalum 180.95 48	W Tungsten 183.84 49	Re Rhenium 190.23 50	Os Osmium 190.23 51	Ir Iridium 192.24 52	Pt Platinum 195.08 53	Au Gold 196.97 54	Hg Mercury 200.59 55	Tl Thallium 204.40 56	Pb Lead 207.20 57	Bi Bismuth 208.98 58	Po Polonium (209) 59	At Astatine (210) 60	Rn Radium (222) 86	Fr Francium (223) 87		
Ra Radium (226) 88	Rb Rubidium (227) 89	Rf Rutherfordium (260) 104	Db Dubnium (260) 105	Sg Sg (260) 106	Bh Bh (269) 107	Hs Hassium (277) 108	Mt Moscovium (281) 109	Ds Darmstadtium (281) 110	Rg Rutherfordium (283) 111	Rg Rutherfordium (283) 112	Cn Copernicium (285) 113	Nh Nh (286) 114	Fl Fl (286) 115	Mc Meitnerium (286) 116	Lv Livermorium (293) 117	Ts Tennessine (293) 118	Og Oganesson (294) 119		

©2024 NC DPI
Stock No. 24856

Group Name	Group Description
Alkali metals	<ul style="list-style-type: none"> _____ Valence Electrons (VE) These elements will _____ when they react with a nonmetal to become a _____ These elements are your _____
Alkaline earth metals	<ul style="list-style-type: none"> _____ Valence electrons (VE) These elements will _____ when they react with a nonmetal to become a _____ These elements are your _____
Halogens	<ul style="list-style-type: none"> _____ Valence electrons (VE) These elements will _____ when they react with a metal to become a _____ These elements are your _____
Noble Gasses	<ul style="list-style-type: none"> _____ 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								

VE: 1 | 2 |

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

PERIODIC TABLE OF THE ELEMENTS

		+1	+2													0	
		1	2													18	
		H	Hydrogen 1.01													He	
3	Li	4	Be	5	6	7	8	9	10	11	12	13	14	15	16	17	
Na	Mg	Al	Si	P	S	Cl	Ar	Ne									
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	Sn	Te	I	Xe		
Cs	Ba	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	
Fr	Ra	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og	

Legend																
Atomic Number	H															Element Symbol
Element Name	Hydrogen 1.01															Average Atomic Mass

©2024 NCDPI
Stock No. 24856

57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	
La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	
Lanthanum 138.91	Cerium 140.12	Praseodymium 140.91	Neodymium 144.24	Promethium (145)	Samarium 150.36	Europium 151.96	Gadolinium 157.25	Terbium 158.93	Dysprosium 162.50	Holmium 164.93	Erbium 167.26	Thulium 168.93	Ytterbium 173.05	Lutetium 174.97	

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 _____.

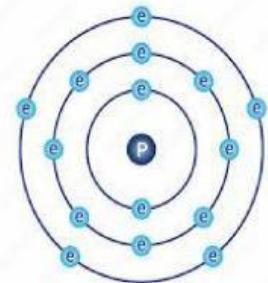
The element F is in group _____ and Period _____ and has _____ valence electrons. An element that would react similarly to F would be _____ because they have the _____. F will react by _____ to form a _____.

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 _____.



•
Na

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.



•
P
•

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-	Bet:	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:	
Ca-	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)

Metals, Nonmetals, and Metalloids

H	metals																		nonmetals						He
Li	Be																								
Na	Mg																								
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr								
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe								
Cs	Ba	Ls	Hf	Ta	W	Re	Os	Ir	Pt	As	Hg	Tl	Pb	Bi	Po	At	Rn								
Fr	Ra	Ac	Rf	Hs	Sg	No	Hs	Mt																	
		Co	Pt	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Hf	Er	Tm	Yb	Lu										
		Th	Pu	U	Np	Pm	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lu										

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.