

Name _____

18

This staircase, or zigzag line, reminds you where the metals, nonmetals, and metalloids are.

Group	Family	Color
1	Alkali metals	
2	Alkaline earth metals	
3-12	Transition metals	
17	Halogens	
18	Noble gases	
*	Metalloids	

A vertical column of elements is called a group or family.

A horizontal row of elements is called a period.

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1	H Hydrogen 1.01	2	He Helium 4.00
3	Li Lithium 6.94	4	Be Beryllium 9.01
11	Na Sodium 22.99	12	Mg Magnesium 24.31
19	K Potassium 39.10	20	Ca Calcium 40.08
37	Rb Rubidium 85.47	38	Sr Strontium 87.62
55	Cs Cesium 132.91	56	Ba Barium 137.33
87	Fr Francium (223.02)	88	Ra Radium (226.03)
21	Sc Scandium 44.96	22	Ti Titanium 47.88
39	Y Yttrium 88.91	40	Zr Zirconium 91.22
57	La Lanthanum 138.91	58	Ce Cerium 140.12
73	Ta Tantalum 180.95	74	W Tungsten 183.84
105	Db Dubnium (262.11)	106	Sg Seaborgium (263.12)
107	Bh Bohrium (262.12)	108	Hs Hassium (265)
110	Ds Darmstadtium (271)	111	Rg Roentgenium (272)
112	Cn Copernicium (285)	113	Nh Nihonium (284)
114	Fl Flerovium (289)	115	Mc Moscovium (288)
116	Lv Livermorium (293)	117	Ts Tennessine (294)
118	Og Oganesson (294)	119	Uue Ununennium (295)
13	Al Aluminum 26.98	14	Si Silicon 28.09
31	Ga Gallium 69.72	32	Ge Germanium 72.61
49	In Indium 114.82	50	Sn Tin 118.71
81	Tl Thallium 204.38	82	Pb Lead 207.20
113	Nh Nihonium (284)	114	Fl Flerovium (289)
115	Mc Moscovium (288)	116	Lv Livermorium (293)
117	Ts Tennessine (294)	118	Og Oganesson (294)
5	B Boron 10.81	6	C Carbon 12.01
13	Al Aluminum 26.98	14	Si Silicon 28.09
31	Ga Gallium 69.72	32	Ge Germanium 72.61
49	In Indium 114.82	50	Sn Tin 118.71
81	Tl Thallium 204.38	82	Pb Lead 207.20
113	Nh Nihonium (284)	114	Fl Flerovium (289)
115	Mc Moscovium (288)	116	Lv Livermorium (293)
117	Ts Tennessine (294)	118	Og Oganesson (294)
7	N Nitrogen 14.01	8	O Oxygen 16.00
15	P Phosphorus 30.97	16	S Sulfur 32.07
33	As Arsenic 74.92	34	Se Selenium 78.96
51	Sb Antimony 121.76	52	Te Tellurium 127.60
83	Bi Bismuth 208.98	84	Po Polonium (209)
115	Mc Moscovium (288)	116	Lv Livermorium (293)
117	Ts Tennessine (294)	118	Og Oganesson (294)
9	F Fluorine 19.00	10	Ne Neon 20.18
17	Cl Chlorine 35.45	18	Ar Argon 39.95
35	Br Bromine 79.90	36	Kr Krypton 83.80
53	I Iodine 126.90	54	Xe Xenon 131.29
85	At Astatine (209.98)	86	Rn Radon (222.02)
117	Ts Tennessine (294)	118	Og Oganesson (294)
69	Tm Thulium 168.93	70	Yb Ytterbium 173.04
101	Lr Lawrencium (262.10)	102	Nobelium (259.10)
103	Uub Ununbium (283)	104	Uuq Ununquadium (285)
105	Uup Ununpentium (286)	106	Uuq Ununquadium (285)
107	Uuh Ununheptium (288)	108	Uuo Ununoctium (293)
109	Uuq Ununquadium (285)	110	Uuo Ununoctium (293)
111	Uuh Ununheptium (288)	112	Uuo Ununoctium (293)
113	Uuq Ununquadium (285)	114	Uuo Ununoctium (293)
115	Uup Ununpentium (286)	116	Lv Livermorium (293)
117	Ts Tennessine (294)	118	Og Oganesson (294)
67	Ho Holmium 164.93	68	Er Erbium 167.26
101	Lr Lawrencium (262.10)	102	Nobelium (259.10)
103	Uub Ununbium (283)	104	Uuq Ununquadium (285)
105	Uup Ununpentium (286)	106	Uuq Ununquadium (285)
107	Uuh Ununheptium (288)	108	Uuo Ununoctium (293)
109	Uuq Ununquadium (285)	110	Uuo Ununoctium (293)
111	Uuh Ununheptium (288)	112	Uuo Ununoctium (293)
113	Uuq Ununquadium (285)	114	Uuo Ununoctium (293)
115	Uup Ununpentium (286)	116	Lv Livermorium (293)
117	Ts Tennessine (294)	118	Og Oganesson (294)
65	Tb Terbium 158.93	66	Dy Dysprosium 162.50
101	Lr Lawrencium (262.10)	102	Nobelium (259.10)
103	Uub Ununbium (283)	104	Uuq Ununquadium (285)
105	Uup Ununpentium (286)	106	Uuq Ununquadium (285)
107	Uuh Ununheptium (288)	108	Uuo Ununoctium (293)
109	Uuq Ununquadium (285)	110	Uuo Ununoctium (293)
111	Uuh Ununheptium (288)	112	Uuo Ununoctium (293)
113	Uuq Ununquadium (285)	114	Uuo Ununoctium (293)
115	Uup Ununpentium (286)	116	Lv Livermorium (293)
117	Ts Tennessine (294)	118	Og Oganesson (294)
63	Eu Europium 151.97	64	Gd Gadolinium 157.25
101	Lr Lawrencium (262.10)	102	Nobelium (259.10)
103	Uub Ununbium (283)	104	Uuq Ununquadium (285)
105	Uup Ununpentium (286)	106	Uuq Ununquadium (285)
107	Uuh Ununheptium (288)	108	Uuo Ununoctium (293)
109	Uuq Ununquadium (285)	110	Uuo Ununoctium (293)
111	Uuh Ununheptium (288)	112	Uuo Ununoctium (293)
113	Uuq Ununquadium (285)	114	Uuo Ununoctium (293)
115	Uup Ununpentium (286)	116	Lv Livermorium (293)
117	Ts Tennessine (294)	118	Og Oganesson (294)
61	Pm Promethium (144.91)	62	Sm Samarium 150.36
101	Lr Lawrencium (262.10)	102	Nobelium (259.10)
103	Uub Ununbium (283)	104	Uuq Ununquadium (285)
105	Uup Ununpentium (286)	106	Uuq Ununquadium (285)
107	Uuh Ununheptium (288)	108	Uuo Ununoctium (293)
109	Uuq Ununquadium (285)	110	Uuo Ununoctium (293)
111	Uuh Ununheptium (288)	112	Uuo Ununoctium (293)
113	Uuq Ununquadium (285)	114	Uuo Ununoctium (293)
115	Uup Ununpentium (286)	116	Lv Livermorium (293)
117	Ts Tennessine (294)	118	Og Oganesson (294)
59	Pr Praseodymium 140.91	60	Nd Neodymium 144.24
91	Th Thorium 232.04	92	Pa Protactinium 231.04
101	Lr Lawrencium (262.10)	102	Nobelium (259.10)
103	Uub Ununbium (283)	104	Uuq Ununquadium (285)
105	Uup Ununpentium (286)	106	Uuq Ununquadium (285)
107	Uuh Ununheptium (288)	108	Uuo Ununoctium (293)
109	Uuq Ununquadium (285)	110	Uuo Ununoctium (293)
111	Uuh Ununheptium (288)	112	Uuo Ununoctium (293)
113	Uuq Ununquadium (285)	114	Uuo Ununoctium (293)
115	Uup Ununpentium (286)	116	Lv Livermorium (293)
117	Ts Tennessine (294)	118	Og Oganesson (294)
58	Ce Cerium 140.12	59	Pr Praseodymium 140.91
90	Th Thorium 232.04	91	Pa Protactinium 231.04
101	Lr Lawrencium (262.10)	102	Nobelium (259.10)
103	Uub Ununbium (283)	104	Uuq Ununquadium (285)
105	Uup Ununpentium (286)	106	Uuq Ununquadium (285)
107	Uuh Ununheptium (288)	108	Uuo Ununoctium (293)
109	Uuq Ununquadium (285)	110	Uuo Ununoctium (293)
111	Uuh Ununheptium (288)	112	Uuo Ununoctium (293)
113	Uuq Ununquadium (285)	114	Uuo Ununoctium (293)
115	Uup Ununpentium (286)	116	Lv Livermorium (293)
117	Ts Tennessine (294)	118	Og Oganesson (294)

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Name _____ Period _____

Electron Diagram

VE - Valence Electrons (electrons in the outermost shell)

