

CONCEPT: PERIODIC TABLE: ELEMENT SYMBOLS

Periodic Table History

- At the end of the 18th century, Antoine Lavoisier compiled a list of 23 elements and their symbols known at the time.
 - In 1869, Dmitri Ivanovich Mendeleev organized them by their recurring or _____ chemical properties.
 - Periodic Law:** The system for organizing the elements.

Element Symbols

- The Periodic Table can be seen as a grid of *element symbols* that is ordered in terms of _____ *atomic number*.
 - Element Symbol:** The abbreviated form of an element.
 - Most elements it's based on the first letters of their name.
 - 11 elements it's based on their **Latin names**.

1A																8A																			
(1)																(18)																			
1 H Hydrogen		2A 2 He Helium												3A 5 B Boron		4A 6 C Carbon		5A 7 N Nitrogen		6A 8 O Oxygen		7A 9 F Fluorine													
3 Li Lithium		4 Be Beryllium		3B (3)		4B (4)		5B (5)		6B (6)		7B (7)		8B (8) (9) (10)		1B (11)		2B (12)		13 Al Aluminum		14 Si Silicon		15 P Phosphorus		16 S Sulfur		17 Cl Chlorine		18 Ar Argon					
11 Sodium		12 Mg Magnesium																		31 Ga Gallium		32 Ge Germanium		33 As Arsenic		34 Se Selenium		35 Br Bromine		36 Kr Krypton					
19 Potassium		20 Ca Calcium		21 Sc Scandium		22 Ti Titanium		23 V Vanadium		24 Cr Chromium		25 Mn Manganese		26 Fe Iron		27 Co Cobalt		28 Ni Nickel		29 Cu Copper		30 Zn Zinc		49 In Indium		50 Sn Tin		51 Sb Antimony		52 Te Tellurium		53 I Iodine		54 Xe Xenon	
37 Rb Rubidium		38 Sr Strontium		39 Y Yttrium		40 Zr Zirconium		41 Nb Niobium		42 Mo Molybdenum		43 Tc Technetium		44 Ru Ruthenium		45 Rh Rhodium		46 Pd Palladium		47 Ag Silver		48 Cd Cadmium		81 Tl Thallium		82 Pb Lead		83 Bi Bismuth		84 Po Polonium		85 At Astatine		86 Rn Radon	
55 Cs Cesium		56 Ba Barium		57 La Lanthanum		72 Hf Hafnium		73 Ta Tantalum		74 W Tungsten		75 Re Rhenium		76 Os Osmium		77 Ir Iridium		78 Pt Platinum		79 Au Gold		80 Hg Mercury		113 Nh Nihonium		114 Fl Flerovium		115 Mc Moscovium		116 Lv Livermorium		117 Ts Tennessine		118 Og Oganesson	
87 Fr Francium		88 Ra Radium		89 Ac Actinium		104 Rf Rutherfordium		105 Db Dubnium		106 Sg Seaborgium		107 Bh Bohrium		108 Hs Hassium		109 Mt Meitnerium		110 Ds Darmstadtium		111 Rg Roentgenium		112 Cn Copernicium													



58 Ce Cerium	59 Pr Praseodymium	60 Nd Neodymium	61 Pm Promethium	62 Sm Samarium	63 Eu Europium	64 Gd Gadolinium	65 Tb Terbium	66 Dy Dysprosium	67 Ho Holmium	68 Er Erbium	69 Tm Thulium	70 Yb Ytterbium	71 Lu Lutetium
90 Th Thorium	91 Pa Protactinium	92 U Uranium	93 Np Neptunium	94 Pu Plutonium	95 Am Americium	96 Cm Curium	97 Bk Berkelium	98 Cf Californium	99 Es Einsteinium	100 Fm Fermium	101 Md Mendelevium	102 No Nobelium	103 Lr Lawrencium

EXAMPLE: Name the halogen with the smallest atomic number.

- a) Fluorine, F b) Chlorine, Cl c) Bromine, Br d) Iodine, I e) Scandium, Sc

PRACTICE: Based on the number of protons each element has, which would you expect to be chemically similar?

- a) Z = 7 and Z = 8 b) Z = 22 and Z = 31 c) Z = 3 and Z = 11 d) Z = 32 and Z = 33