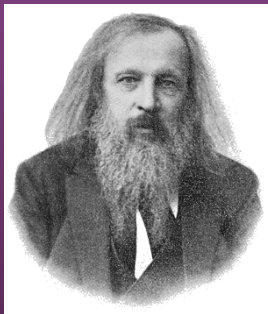


History of the Periodic Table



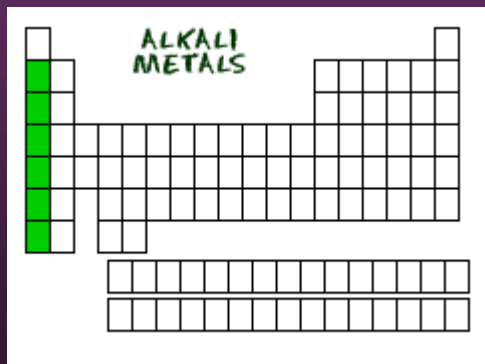
In **1869**, **Dmitri Mendeleev** created the first periodic table and ordered the elements by their **atomic masses**. He noticed that elements in the same groups had **similar chemical and physical properties**. However, there were some **gaps** in his table.



In **1913**, when **Henry Moseley** arranged the elements in the periodic table by their **number of protons** rather than their atomic weights, the flaws in the periodic table that had been making scientists uncomfortable for decades simply disappeared.

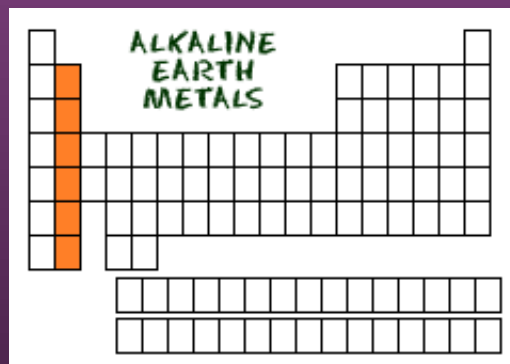
Periodic Table Columns

Left side of the table = metal elements



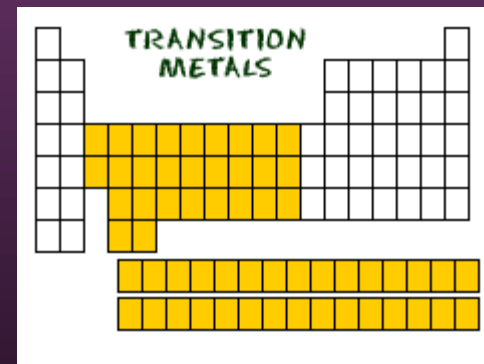
A simplified periodic table diagram with the first column highlighted in green. The text "ALKALI METALS" is written in green above the highlighted column.

Group 1
Alkali Metals
(except for hydrogen)
Most reactive metals



A simplified periodic table diagram with the second column highlighted in orange. The text "ALKALINE EARTH METALS" is written in green above the highlighted column.

Group 2
Alkaline Earth Metals
Slightly less reactive



A simplified periodic table diagram with the d-block elements (Groups 3-12) highlighted in yellow. The text "TRANSITION METALS" is written in green above the highlighted block.

Groups 3 – 12
Transition Metals
Can combine in many
ways with nonmetals

Right side of the table = nonmetal elements

THE METALLOIDS

A simplified periodic table with a zigzag line of purple squares representing metalloids. The line starts at Boron (top right of the second column), goes down to Silicon, then diagonally up to Arsenic, then diagonally down to Tellurium, and finally diagonally up to Astatine. The rest of the table is white.

**Zig Zag Line
Metalloids**

**Semi-metals have
properties of both metals
and nonmetals**

THE HALOGEN GROUP

A simplified periodic table with a single column of blue squares representing the halogen group (Group 17). This column is located between the metalloids and the noble gases. The rest of the table is white.

**Group 17
Halogens**

Most reactive nonmetals

THE NOBLE GASES

A simplified periodic table with a single column of red squares representing the noble gas group (Group 18). This column is the far right of the periodic table. The rest of the table is white.

**Group 18
Noble Gases**

**Un-reactive gases.
Full octet.**

Periodic Table Rows

Horizontal rows on the periodic table are called **periods**. Each row represents a new electron **orbital** cloud at a higher **energy level**.

periods

The diagram illustrates the periodic table with six horizontal rows, each representing a period. The rows are color-coded and labeled with arrows on the left and energy level values (n) on the right. The first row (n=1) is pink and contains 2 elements. The second row (n=2) is orange and contains 8 elements. The third row (n=3) is yellow and contains 8 elements. The fourth row (n=4) is green and contains 18 elements. The fifth row (n=5) is blue and contains 18 elements. The sixth row (n=6) is purple and contains 18 elements.

Period	Energy Level (n)	Number of Elements
1	n = 1	2
2	n = 2	8
3	n = 3	8
4	n = 4	18
5	n = 5	18
6	n = 6	18

Periodic Table of the Elements

Periodic Table of the Elements

1																	2							
1	H																	He						
2	Li	Be																	B	C	N	O	F	Ne
3	Na	Mg	III B	IV B	VB	VIB	VII B	VII				IB	IIB	Al	Si	P	S	Cl	Ar					
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr						
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe						
6	Cs	Ba	*La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn						
7	Fr	Ra	+Ac	Rf	Ha	Sg	Ns	Hs	Mt	110	111	112	113											

* Lanthanide Series

+ Actinide Series

58	59	60	61	62	63	64	65	66	67	68	69	70	71
Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
90	91	92	93	94	95	96	97	98	99	100	101	102	103
Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr