

Unit 2: Periodic Table

Periodic Law and Labeling

The Periodic Law

When the elements are arranged by increasing atomic number,

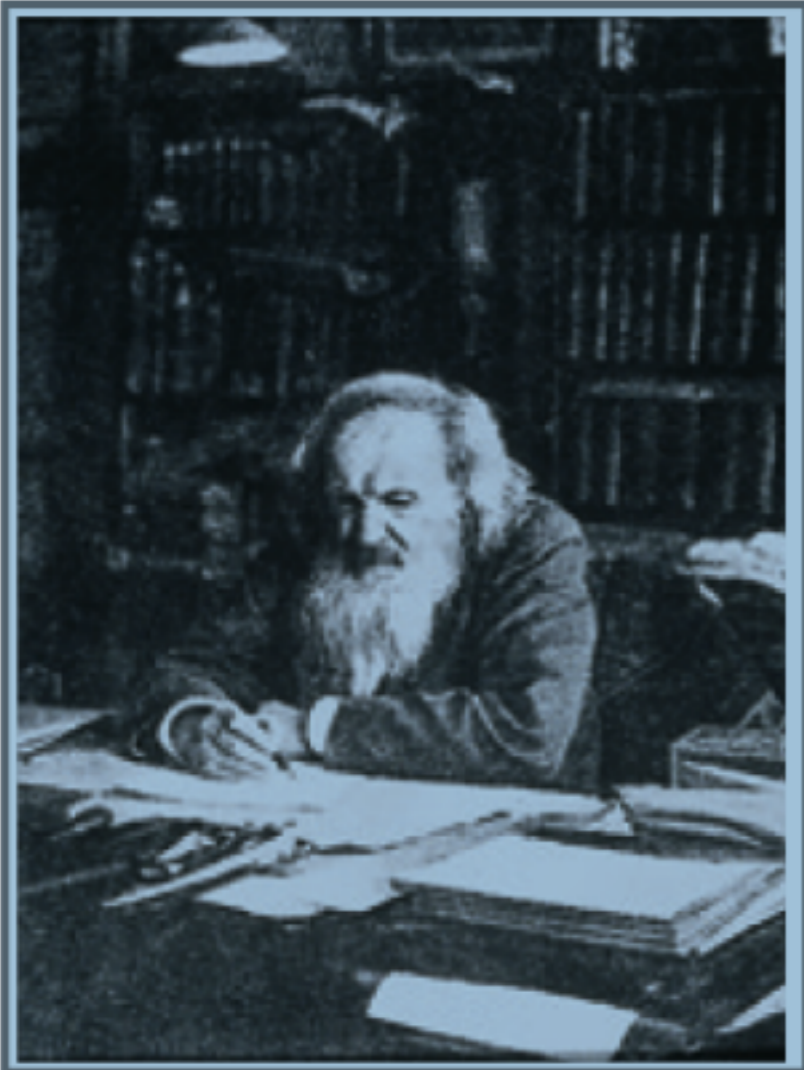
The Periodic Law

When the elements are arranged by increasing atomic number, there is a periodic repetition of their chemical and physical properties.

Dmitri Mendeleev (1834-1907)

- First to notice the element's periodic repetition of properties.
- Designed the first periodic table (in 1869)

Mendeleev



ПЕРИОДИЧЕСКАЯ СИСТЕМА ЭЛЕМЕНТОВ
Д. И. МЕНДЕЛЕЕВА

	0	I	II	III	IV	V	VI	VII	VIII
1		H							
2	He	Li	Be	B	C	N	O	F	
3	Ne	Na	Mg	Al	Si	P	S	Cl	
4	Ar	K	Ca	Sc	Ti	V	Cr	Mn	Fe Co Ni
5		Cu	Zn	Ga	Ge	As	Se	Br	
		Rb	Sr	Y	Zr	Nb	Mo		Ru Rh
						Sb	Te	J	

Mendeleev

- His periodic table was arranged by atomic mass. (our current PT is arranged by atomic number)
- He was able to predict properties of undiscovered elements.

Labeling the PT

- Rows across the PT are called periods (1-7)
- Columns down the PT are called groups or families (1-18)



Period



Column/
Family

The Super Seven!

Write this!

- Diatomic elements are found in nature as pairs of atoms; two identical atoms bonded together.

Periodic Table

Periodic Table																		D. BARENNESS	
CHEM 101																		10	
1 IA																		VIIA	
1																		2	
11																		12	
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99																		100	

Don't draw this!

- The super seven (diatomic elements) are H₂, N₂, O₂, F₂, Cl₂, Br₂, & I₂

I	→	I odine, I ₂
B ring	→	B romine, Br ₂
C ookies	→	C hlorine, Cl ₂
F or	→	F luorine, F ₂
O ur	→	O xygen, O ₂
N ew	→	N itrogen, N ₂
H ome	→	H ydrogen, H ₂

Phases!

- 2 liquids
- 11 gases (don't forget hydrogen!)
- the remaining are solids