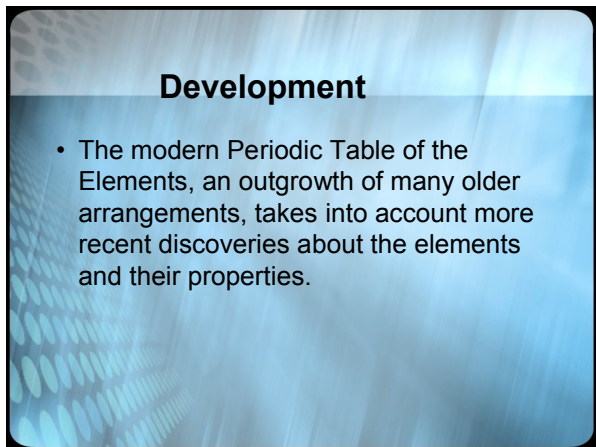


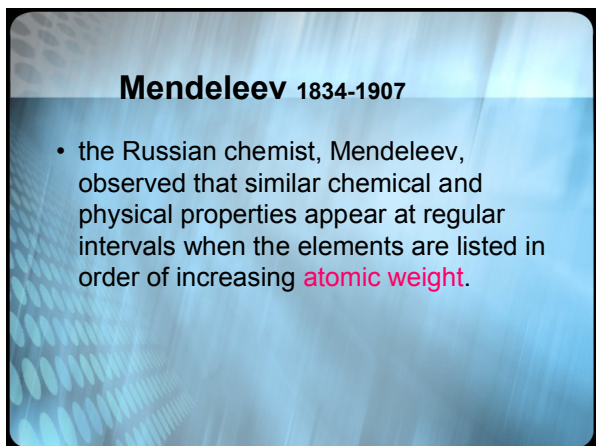
The Periodic Table

History and Organization



Development

- The modern Periodic Table of the Elements, an outgrowth of many older arrangements, takes into account more recent discoveries about the elements and their properties.



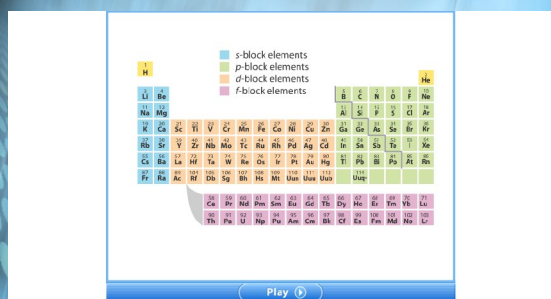
Mendeleev 1834-1907

- the Russian chemist, Mendeleev, observed that similar chemical and physical properties appear at regular intervals when the elements are listed in order of increasing **atomic weight**.

Moseley 1885-1915

- X-ray studies done by Moseley, an English Physicist, showed that properties of the elements are a function of the **atomic number**, not of the atomic weight.

Periods and Groups



Periodic Law

- The modern Periodic Law states :
 - *The properties of the elements are periodic functions of their atomic numbers.*

PERIODS

- The number of each period shows the principal energy level

Periodic Table of Elements

f Lanthanide 4f
Actinide 5f

PERIODS

- The horizontal rows of the table are called **periods** or rows.

Period number	Number of elements in period	Sublevels in order of filling
1	2	1s
2	8	2s 2p
3	8	3s 3p
4	18	4s 3d 4p
5	18	5s 4d 5p
6	32	6s 4f 5d 6p
7	32	7s 5f 6d etc.

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GROUPS

- The vertical columns of the Periodic Table are called **groups** or **families**.

Group Designations

- The traditional designation for each group has been a combination of a Roman numeral and the letter A or B, such as IA or IIB.
- These designations are often used along side of a new form which numbers the groups from 1 to 18.

Periodic Table of Elements

	IA																0
1		IIA						IIIA	IVA	VA	VIA	VIIA					
2																	
3																	
4			IIIB	IVB	VB	VIB	VIIB	VIIIB	IB	IIB							
5																	
6																	
7																	
