element song.mp4 Daniel Radcliffe sings The Element's Song.mp4
Vin Diesel on Helium.mp4
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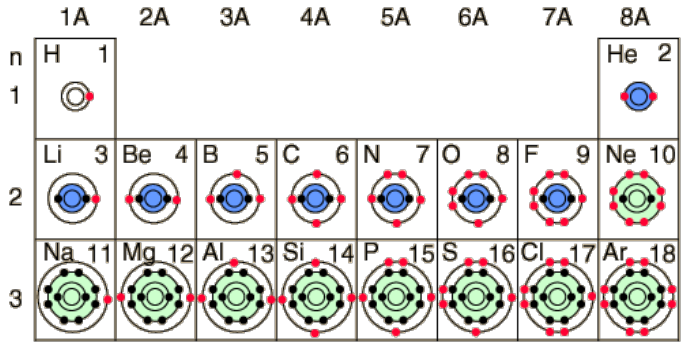
Periodic Table Part 1

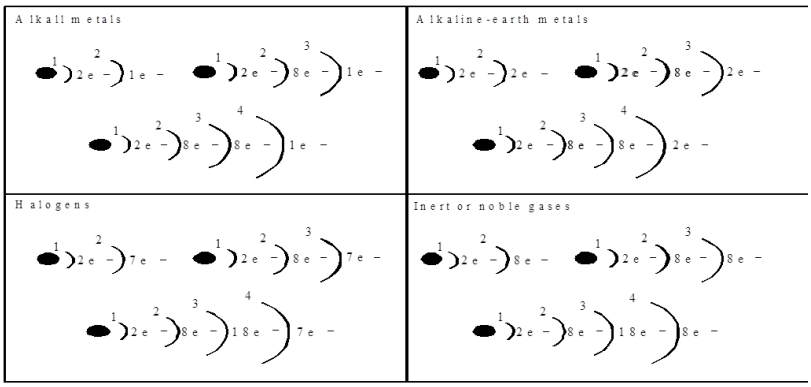
Def: Is a visual representation which organizes the elements by chemical and physical properties.

Group or Family:

Elements which are in the same group form a column vertically in the PT. They are grouped together because they have similar characteristics. They have similar characteristics because have the same number of valence electrons.

Valence electrons: number of electrons on the last orbit.



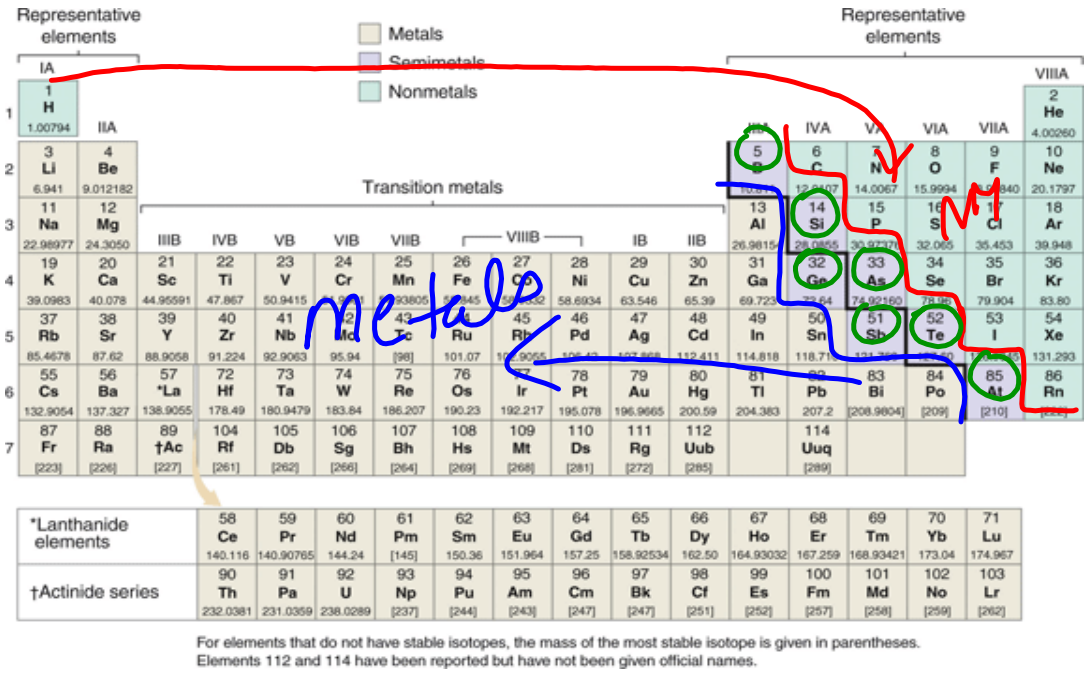


Periods, orbits, energy shells or energy levels:

Group elements together horizontally. They are grouped together because all the elements in the period use the same number of orbits.

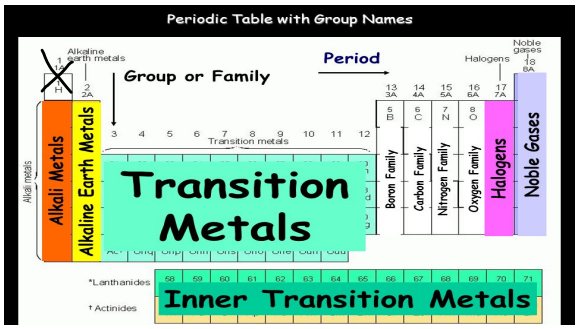
Metals, non-metals and metalloids:

Elements are also divided by a staircase on the periodic table.



Metals	Non-metals	Metalloids
-left of the stair case - metallic luster - conducts heat - conducts electricity - malleable - ductile - soft - very reactive when placed in water and acid - high melting point - all solids except for mercury	- Right of stair case - Found in 3 states of matter - Opposite properties of metals	- almost surround the staircase - characteristics of both metals and non-metals - ex: might be malleable, but does not conduct

Specific Family or Group Names



Alkali metals	Alkaline earth metals	Halogen	Noble or inert gas
- has all characteristics of metals - most reactive family because has only 1 ve - as you go down the family element becomes more reactive - H is not part of the family, put there because has 1 ve	- same as alkali metals - less reactive than alkali metals because has 2 ve	- same characteristics as non-metals - becomes more reactive as you go up the family - halogen + metal = salt - used as antiseptics	-if electricity is passed through them a bright light is produced - He placed there even though does not have 8 ve because its orbit is full at 2 ve - has full and stable orbits and therefore completely stable

Comparing the four halogens (28).mp4

Brainiac Alkali Metals.mp4

Francium Bomb in Ocean.mp4

Group 2 Reactions with water - Periodic Prope

Huge Chunk of Sodium in Pond.mp4

Families 3-6 group names are named after the first element in the group. Ex- Group 3 is called the boron group.

Elements vs compounds

Groups 1-7 are always found as compounds, not as elements in everyday use. Metals need to donate electrons to become stable and non-metals need to accept them from metals. When metals and non-metals do this they form a compound and become stable. Until they form the compound they are considered unstable and may also be dangerous.

Group 8 is always found as an element, never as a compound. This is because their orbit is already full and stable with 8 electrons.

Past exam questions

1. Fill in the table below.

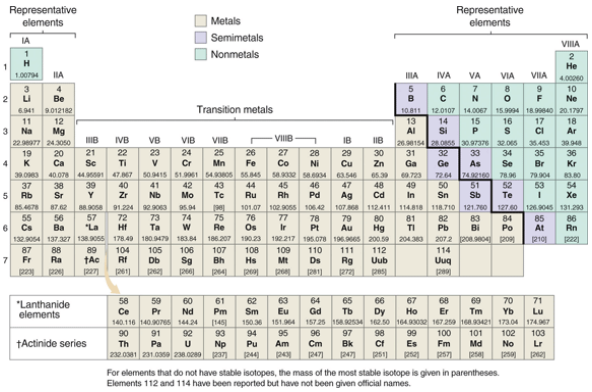
Element	Number of Valence Electrons	Chemical Family Name
Br		
Ca		
Na		
Ne		

2. Four elements from the periodic table are described below.

Element 1	This element from Period 2 has two more electrons than helium.
Element 2	This soft metal from Period 3 has one valence electron.
Element 3	This element from Period 4 is found in bones and teeth.
Element 4	This element from Period 3 has some of the properties of metals and non-metals.

Which of these elements belong to the same group or chemical family?

A) 1 and 2 B) 1 and 3 C) 2 and 4 D) 3 and 4



3. The table below provides certain information about the symbol, the electron configuration, the name of the chemical family and the period number of four elements in the periodic table.

Symbol	Electron configuration	**Name of the chemical family**	**Period number**
Mg			
		Alkali metals	2
	•)2e⁻)3e⁻		
	•)2e⁻		

Fill in the table above.

Attachments

element song.mp4

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