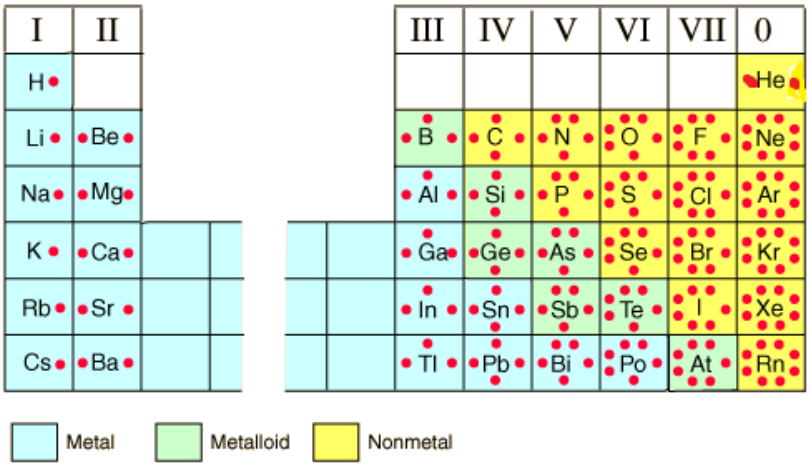
Periodic Table Part 2

Lewis Notation

- Dots are used to show the number of valence electrons an element has.
- All elements in the same group have the same Lewis notation.
- Dots are put in the 4 compass points (N, E, S and W).
- You cannot double up on a compass point until each point has a dot. No compass points should have more than 2 dots.

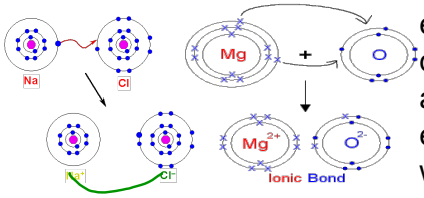


Incorrect:

Ions

Def: Are charged atoms.

- they could be positively or negatively charged.
- they become charged by **gaining or losing electrons.**
- all elements in the same family have the same ion charge.
- metalloids will follow the family rule.



When an element donates or accepts electrons they will form a compound and become stable.

Metals:

- Groups 1, 2 and 3.
- Donate electrons to non metals and form positive ions.

Group 1	Group 2	Group 3
11p+ 2 8 1 NM 11p+ + 11e- = neutral 11p+ + 10e- = not neutral	12p+ 2 8 2 NM 12 p+ + 12e- = neutral 12p+ + 10e- = not neutral	13p+ 2 8 3 NM 13p+ + 13e- = neutral 13p+ + 10e- = not neutral
Charge? +1	+2	+3
Why? because it has 1 more p+ than e-	because it has 2 more p+ than e-	because it has 3 more p+ than e-

Non-Metals:

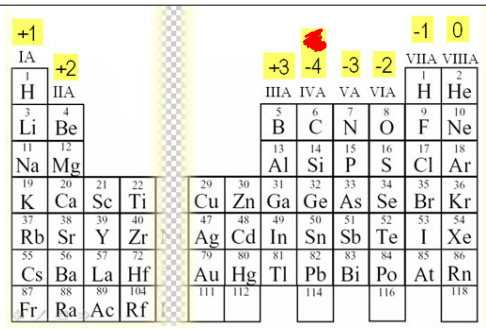
- Groups 4-8
- Accept electrons from metals and form negative ions.

Group 4	Group 5	Group 6	Group 7
14p+ 2 8 4 4e- 14p+ + 14e- = neutral 14p+ + 18e-	15p+ 2 8 5 3e- 15p+ 15e- 15p+ 18e-		
Charge? -4	-3	-2	-1
Why? gained 4 more e- than p+	gained 3 more e-	gained 2e-	gain 1e-

Group 8

Does not form ions. Why?

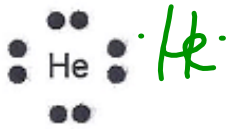
Because their orbits are full and are therefore already a stable atom.



Past exam questions

1. Which atom is correctly represented with the Lewis notation?

A) 

B) 

C) 

D) 

2. During ionization, an atom can become a positive ion. How does an atom become a positive ion?

A) It gains one or more electrons
B) It loses one or more electrons
C) It gains one or more protons
D) It loses one or more protons