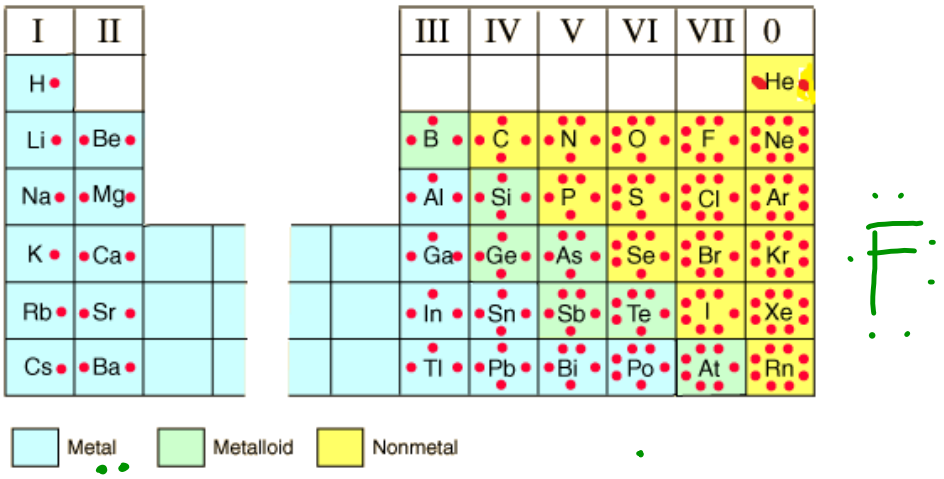
Periodic Table Part 2

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.

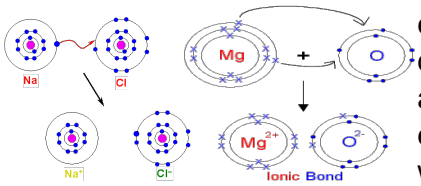


Incorrect:

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
Na 11p+ 2 8 1 after 11p+ 10e = ion	Mg 12p+ 2 8 2 after 12p+ 10é = ion	Al 13p+ 2 8 3 after 13p+ 10é
Charge? +1	+2	+3
Why? donated 1é so have an extra p+.	donated 2é so have 2 extra p+	donated 3é so have 3 extra p+

Non-Metals:

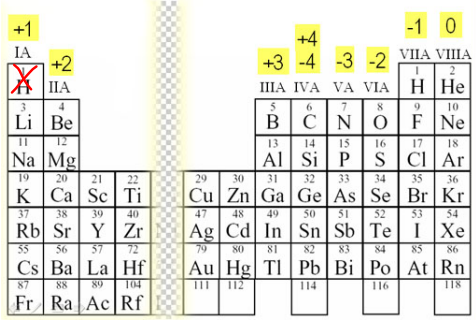
- Groups 4-8
- Accept electrons from metals and form negative ions.

Group 4	Group 5	Group 6	Group 7
Si 14p+ 2 8 4 after 14p+ 18é	P 15p+ 2 8 5 after 15p+ 18é	S 16p+ 2 8 6 after 16p+ 18é	
Charge? -4	-3	-2	-1
Why? accepted 4é	accepted 3é	accepted 2é	accepted 1é

Group 8

Does not form ions. Why?

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



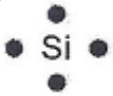
Past exam questions

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