

Chemistry : Bonding :

Section 1 - Ionic Bonding

- **Chemical Bond**: electrostatic attraction between + and - particles.
- **Ionic Bonds**:
 - represented as 3D cube of positive and negative particles.
 - chemical bond between oppositely charged ions.
 - Cation: positive ion, Anion: negative ion
 - Cations are always formed **from metals** because **metal atoms lose electrons**.
 - Anions are always formed **from non-metals** because **non-metallic atoms gain electrons**.

- **Positive Ions**:

when a metal loses an electron it will have

the configuration of a noble gas, therefore we

put **square brackets** around the drawing with a + sign on the top right corner of the brackets.

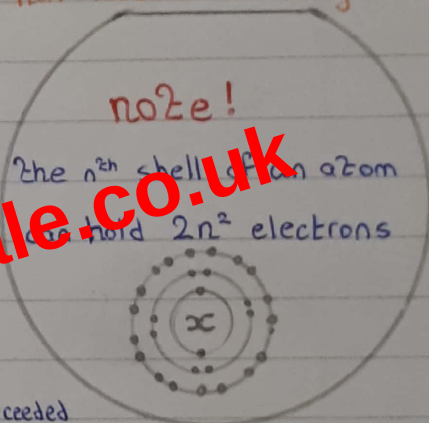
E.g.



keep in mind

the + sign is preceded

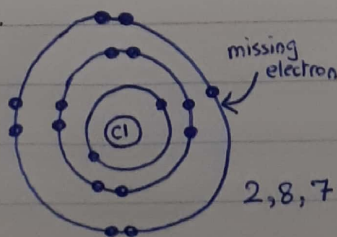
by the num. of electrons lost.



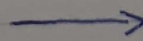
- **Negative Ions**:

when a non-metal gains an electron to stabilize it will have the configuration of a noble gas, therefore we put square brackets around the drawing with a - sign preceded by the num. of electrons gained on the top right corner of the brackets. This is done so as not to confuse it with the noble gas it became alike with in electronic structure.

E.g.



2,8,7



2,8,8

- **Electron Shells**:

1st shell : 2 electrons 3rd shell : 8 electrons

2nd shell : 8 electrons $2n^2$ rule **doesn't** apply in GCSEs.