**Lewis Diagrams**
**Science 10 Notes**



**Problems with Bohr Diagrams**

- Bohr diagrams are great for drawing a single atom
- Bohr diagrams include lots of things that are not important for bonding
- The only things that are really important for chemical bonding are:
  - The chemical symbol for the atom
  - The valence electrons

**Bohr vs Lewis Diagrams**

- Lewis diagrams use the chemical symbol
- Lewis diagrams only include the valence electrons
- Electrons are placed at compass points first
- After 4 electrons are placed, then we begin pairing them up

**Examples**

Draw a Lewis Diagram for:

Sodium


Carbon


Chlorine

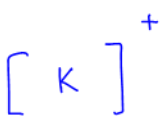

**Lewis Diagrams for Ions and Ionic Compounds**

- Very similar to Bohr Diagrams for ions
- The only difference is that you only include valence electrons

**Examples**

Draw a Lewis Diagram for:

A Potassium Ion

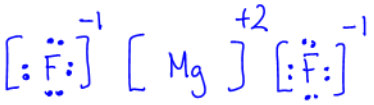



↳ no electrons in its valence shell

they have been given away.

NaCl

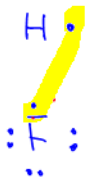

$MgF_2$

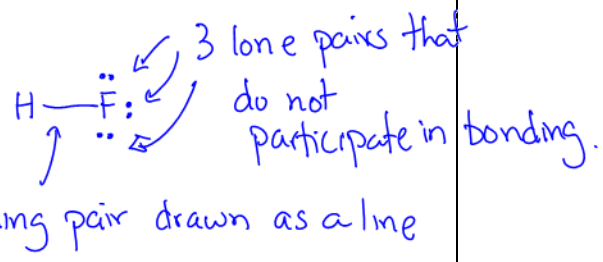


**Lewis Diagrams for Covalent Compounds**

- Shared electrons, or bonding pairs, are drawn as a line,

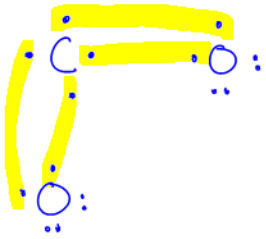
Eg: HF

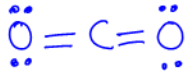




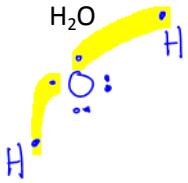

- This allows allows us to show compounds that share more than one electron

Eg: $CO_2$





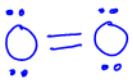
$H_2O$



**Diatomic Molecules**

- There are seven special elements that form chemical bonds with themself $O_2, N_2, H_2, F_2, Cl_2, Br_2, I_2$

- These are called the special seven and they form a 7 on the periodic table (almost)



① worksheet
② p62-64 in workbook.