Properties of Ionic Compounds

- Metal and a Nonmetal
- Brittle - form crystal structures that break easily on impact
- Hard - the crystal structure can scratch other materials - good for grinding and polishing
- Solids at room temperature
- High Melting points - positive and negative charges ions
- Electrolytes - Conducts electricity when dissolved in water - when they dissolve the ions separate and can move around - moving charged particles allows electricity to flow
- The ions are used by your body as nutrients
    - Ca^{+2} and Mg^{+2} in milk
    - Fe^{+3} in meat
    - Na^{+1} in salt
    - K^{+1} in bananas
- Examples
    - KCl and NaCl - used for nerve and muscle signals
    - $CaCl_2$ - road salt to melt ice

Properties of Molecular Compounds

- Two or more Nonmetals - CO_2, NH_3, H_2O, $C_6H_{12}O_6$
- Not hard
- Malleable
- Exists as either solids, liquids or gas
- Low melting points - particles not attracted to each other
- Does NOT conduct electricity when dissolved in water - no ions are formed
    - Therefore electrons are not transferred

Because of the differences in the properties we believe that **molecular** compounds **SHARE** their electrons to be stable.

Modelling Molecular Compounds

- Draw Lewis Model of the atoms
- Line up unpaired electrons
- Circle electrons to show the octet
- Replaced shared electrons with a solid line

Example: carbon tetrafluoride CF_4

Example: water H_2O

Example: carbon dioxide CO_2