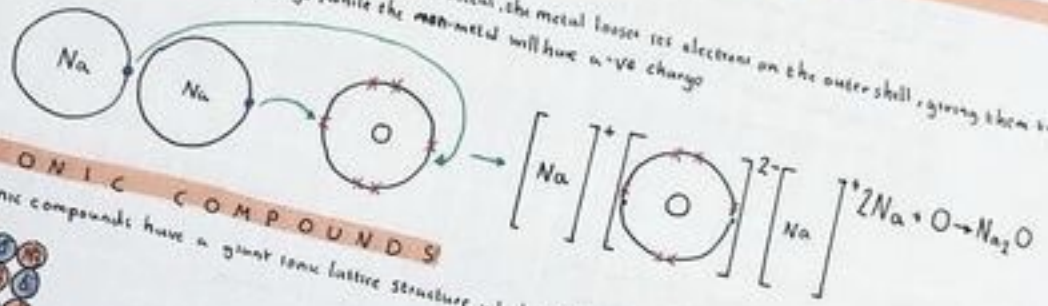
BONDING, STRUCTURE AND PROPERTIES OF MATTER

IONIC BONDING

- takes place between a metal and a non-metal. the metal looses its electrons on the outer shell, giving them to the non metal. the metal will have a +ve charge, while the non-metal will have a -ve charge

Na_2O



IONIC COMPOUNDS

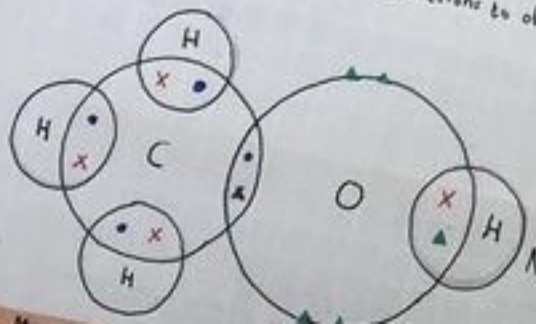
- ionic compounds have a giant ionic lattice structure which is held together by electrostatic attraction (lots + strong)

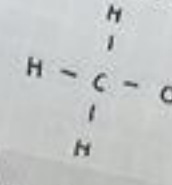
Properties of ionic compounds	Explanation
- regularly shaped crystals - brittle - high melting and boiling points - soluble in water - do not conduct electricity as solid - conduct molten or aq	- ions are arranged in a regular lattice with rows and columns - held together by lots of strong electrostatic attractions of layers shift ions charge will repel - held together by lots of strong electrostatic attraction which lots of energy is needed to break them - they are charged so interact well with water - no delocalised electrons to carry the current - negative ions can move to carry the current

COVALENT BONDING

- two or more non-metals share electrons to obtain a full outer shell

CH_4O





$N \equiv N$

- dot and cross diagrams are useful for showing which atom electrons are from but dont show the relative size of atoms
- the displayed formula shows covalent bonds but dont show the 3D structure or which atom they come from
- the 3D model