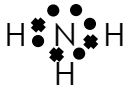
Covalent bonding

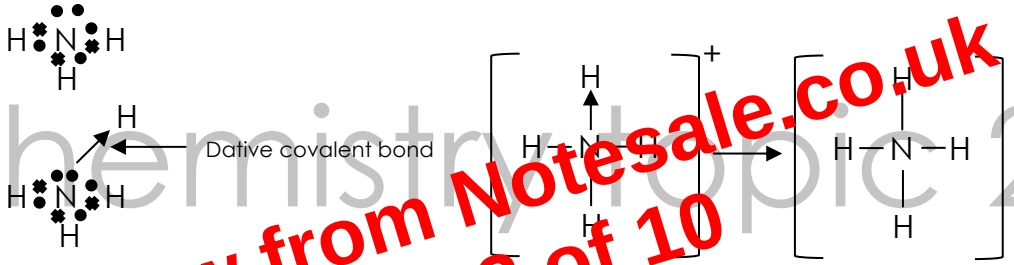
- It is a bonding between non-metal (non-mental atoms)
- Covalent bond is an electrostatic force between two positive nuclei and the shared pair of electrons between them
- Atoms share electrons to get the nearest noble gas electronic configuration
- Some don't achieve an "octect" as they haven't got enough electrons
- Others share only some – if they share all they will exceed their "octect"

Diagrams – You need to be able to draw dot-and-cross diagrams to show electrons attraction between two nuclei and the shared pair of electrons between them

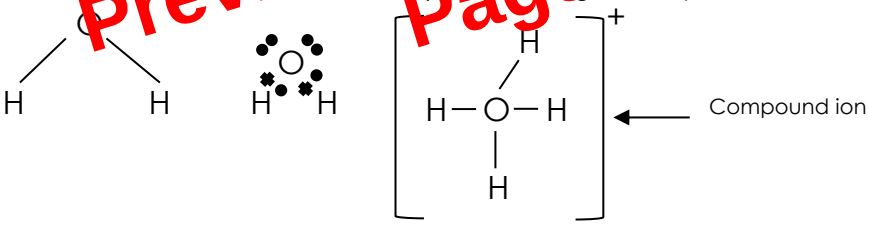
H_2	H — H	H ⁘ H
O_2	O — O	O ⁘ O
NH_3	H— N— H | H	

Dative covalent bond

- Similar to covalent bond but both electrons of the shared pair are provided by one species (donor) and it shares the electrons with the acceptor
- Donor species will have lone pairs in their outer shells



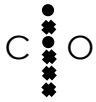
$H_2O \rightarrow H_3O^+$ – exist in acids (H^+ high charge density, therefore too reactive on their own)



Why not H_4O^{2+} then?
Positive charge compound ion will repel with the positive H ion. Therefore, H_4O^{2+} won't form

Carbon monoxide (How it is formed)

1) 

2) 

3) C⇇O C≡O