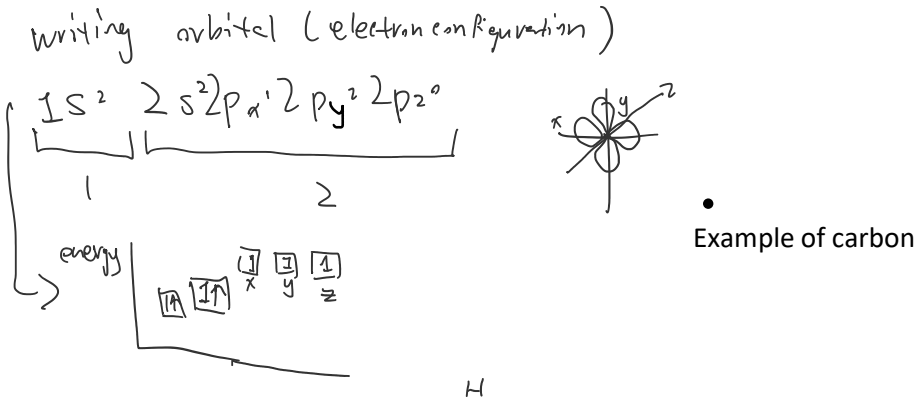
Hybridization

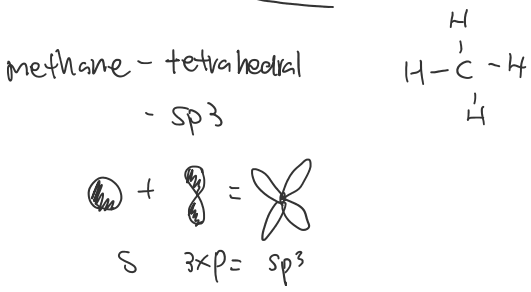
Tuesday, 5 March 2024 9:20 am

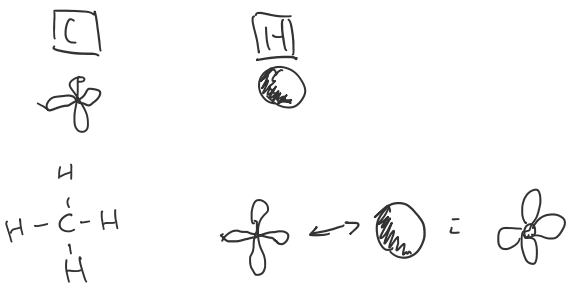
Hybrid orbital - when covalent bond form (when orbital merges (overlaps))
Hybridization - the orbitals that molecule are made up of
When look at the molecular shape (where the molecule are made up) - this also called as hybridization of molecule

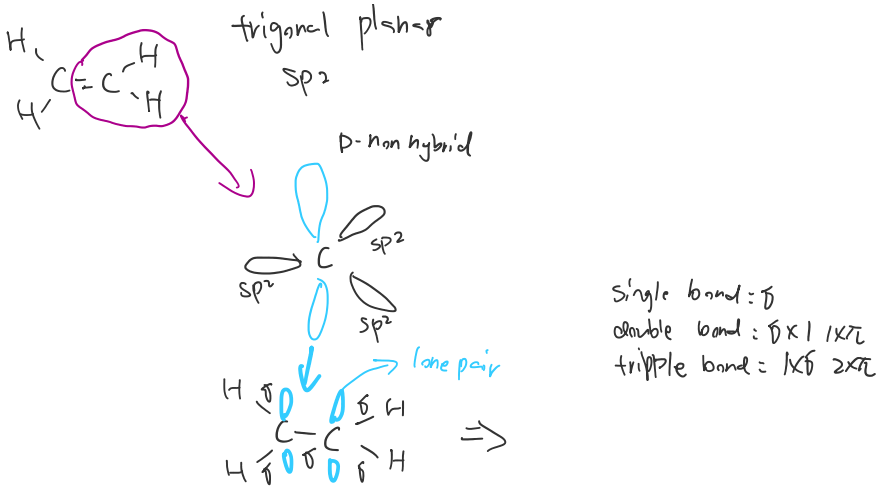
- Tetrahedral sp3
- Trigonal planner sp2
- Linear sp



- Example of carbon







Molecular shapes can be arrived at either by using VSEPR theory or by knowing the type of hybridization. Hybridization can take place between any s and p orbital in the same energy level, and is not restricted to carbon compound. If the shape and angle are known then the type of hybridization can be deduced. Vice versa

Hybrid Sp3	Bond angle 109 degree - tetrahedral	Example Nitrate …
Sp2	120 degree - trigonal planar	Ethene,diazene,methanol
sp	180 degree - linear	Nitrogen, C2H2

- Deciding the hybridization depends on the number of region of electron density.

<u>Benzene</u>

As the example of resonance