Organic Chemistry Notes

#1 rule: Carbon has 4 bonds.

Drawing Arrows

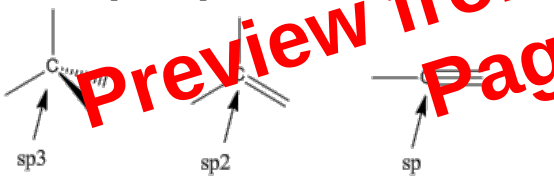
- Atoms may have lone pairs even if they are not shown.
- Back of arrow→ negative charge/electrons
- Front (Head) of arrow →protons/atoms you're attacking
- Count your atoms-especially if you need to conduct a retro-synthesis

Resonance

- SUPER important in organic chemistry
- Stability, acid/bases, and hybridization are all about resonance-push electrons
- Resonate with only lone pairs or double bonds-can push electrons to the next atom or bond, don't resonate too far to several atoms away!
- Stability is based on number of charges and how well the atom is with a charge
    - Negative - charges: O>N>C
    - positive + charges: N>O>C

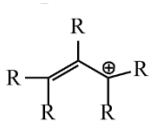
Hybridization

- sp3 →single bonds
- sp2 →double bonds
- sp →triple bonds

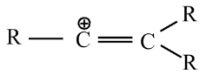


- Keep the lone pairs in mind!!! Especially for S,O,N…etc.
- Try to find a **lower** hybridization (such as sp instead of sp2, or sp3) by resonating.

Allylic vs. Vinylic:



allylic carbocation



vinylic carbocation

- Allylic is favored.
- Vinylic is unstable and would prefer to resonate if possible.

DeltaG

- Remember this formula: deltaG= (5.7)(pkA)