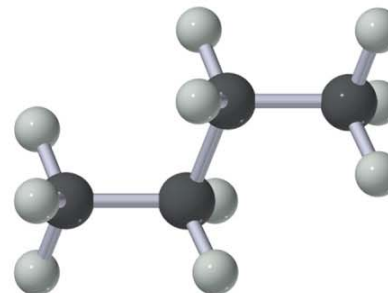
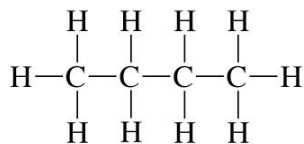
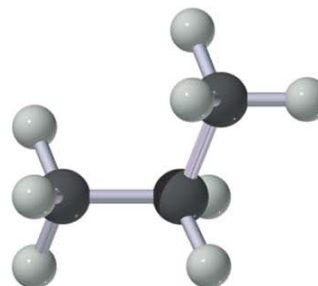
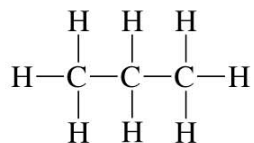
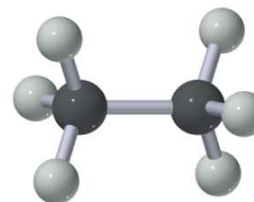
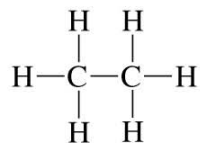
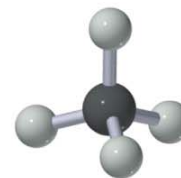
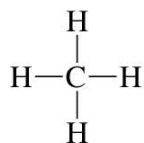


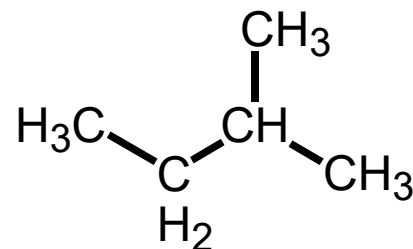
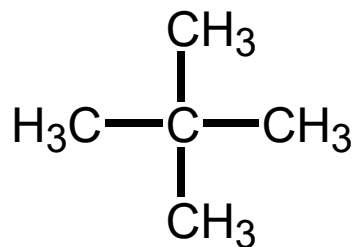
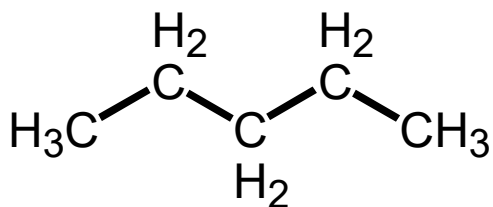
Chapter 4: Organic Compounds

Part 1: Organic Compounds and Alkanes

Naming Organic Compounds



Naming Organic Compounds

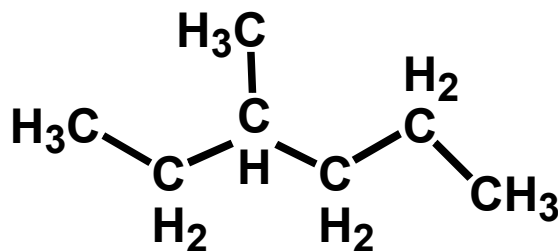


Naming Organic Compounds

IUPAC Nomenclature

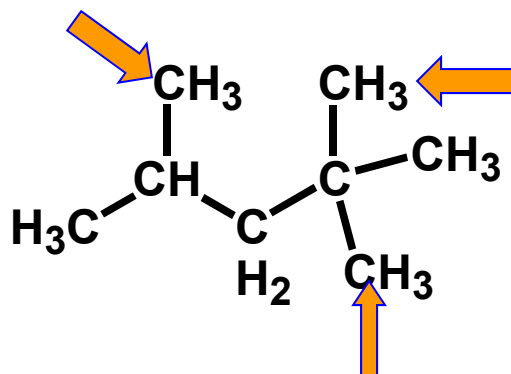
→ All compounds are named as derivatives of the longest single carbon chain.

→



Naming Organic Compounds

→ The modifying prefixes such as di, tri, tetra, etc. are used when you have more than one of the same group.

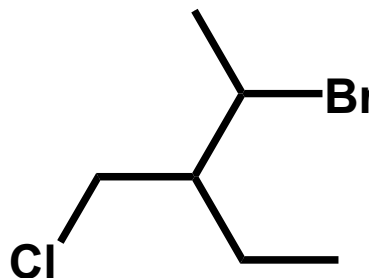
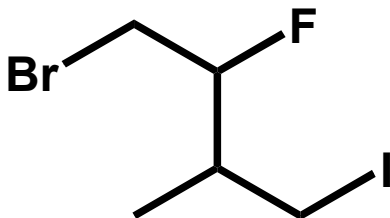


Naming Organic Compounds

Functional group nomenclature

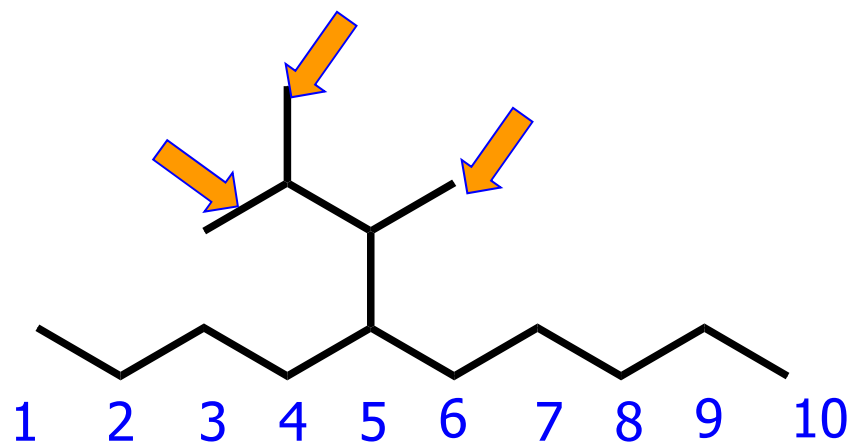
The prefixes fluoro, chloro, bromo, iodo used to indicate presence of halogens (halo).

They are treated in same manner as alkyl substituents.



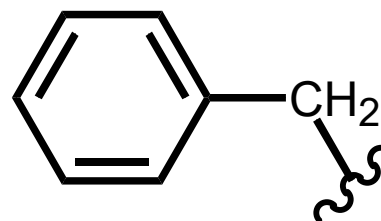
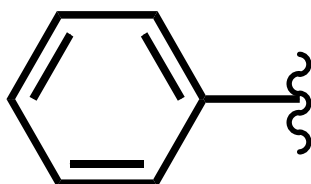
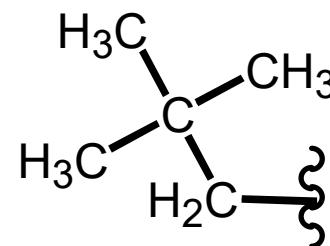
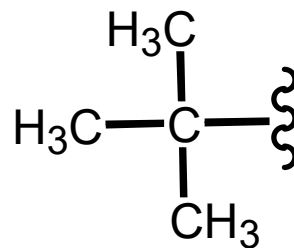
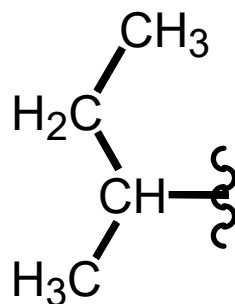
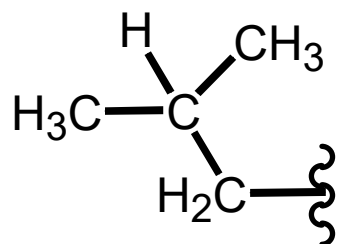
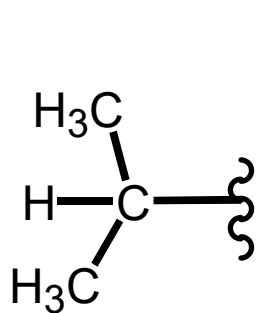
Naming Organic Compounds

- More complex appendages are named as derivatives of the longest carbon chain in a side group.
- These are enclosed in parentheses.



Naming Organic Compounds

Common Branched Groups:

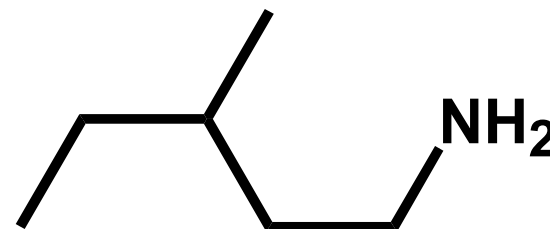
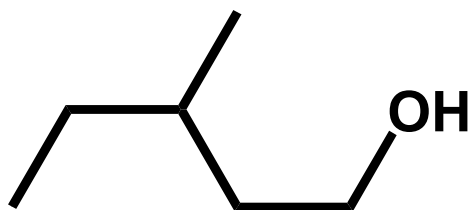


Naming Organic Compounds

Rules for IUPAC Nomenclature

Naming Organic Compounds

- Many organic compounds named by changing the suffix.
- New suffix dominates #'s over alkane substituents
-



Major Organic Chemistry Functional Groups



Alkane



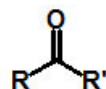
Alkene



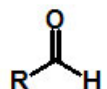
Conjugated
Alkene



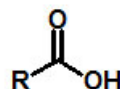
Alkyne



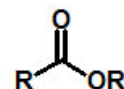
Ketone



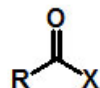
Aldehyde



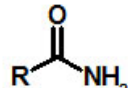
Carboxylic
Acid



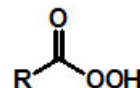
Ester



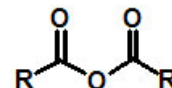
Acid Halide



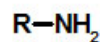
Amide



Peroxy Acid



Anhydride



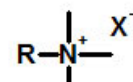
Primary
Amine



Secondary
Amine



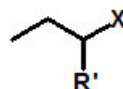
Tertiary
Amine



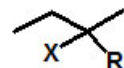
Quaternary
Ammonium Salt



Primary
Alkyl Halide



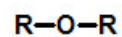
Secondary
Alkyl Halide



Tertiary
Alkyl Halide



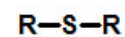
Alcohol



Ether



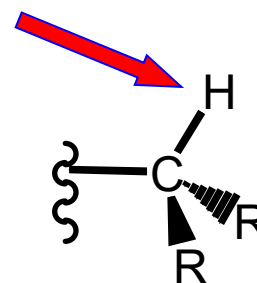
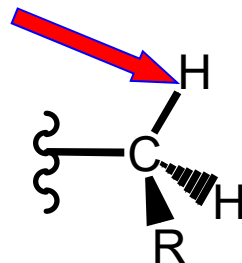
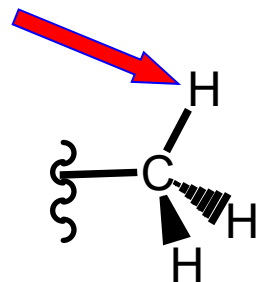
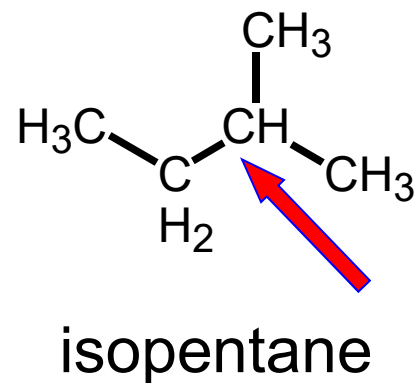
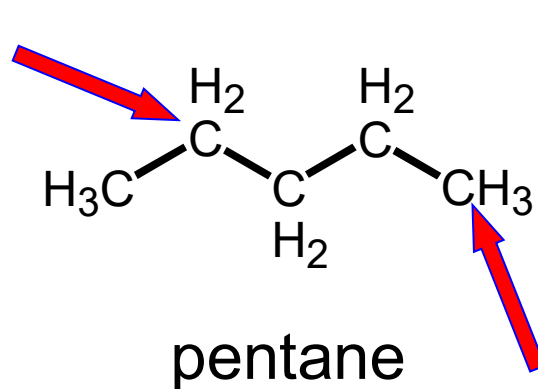
Thiol



Thioether

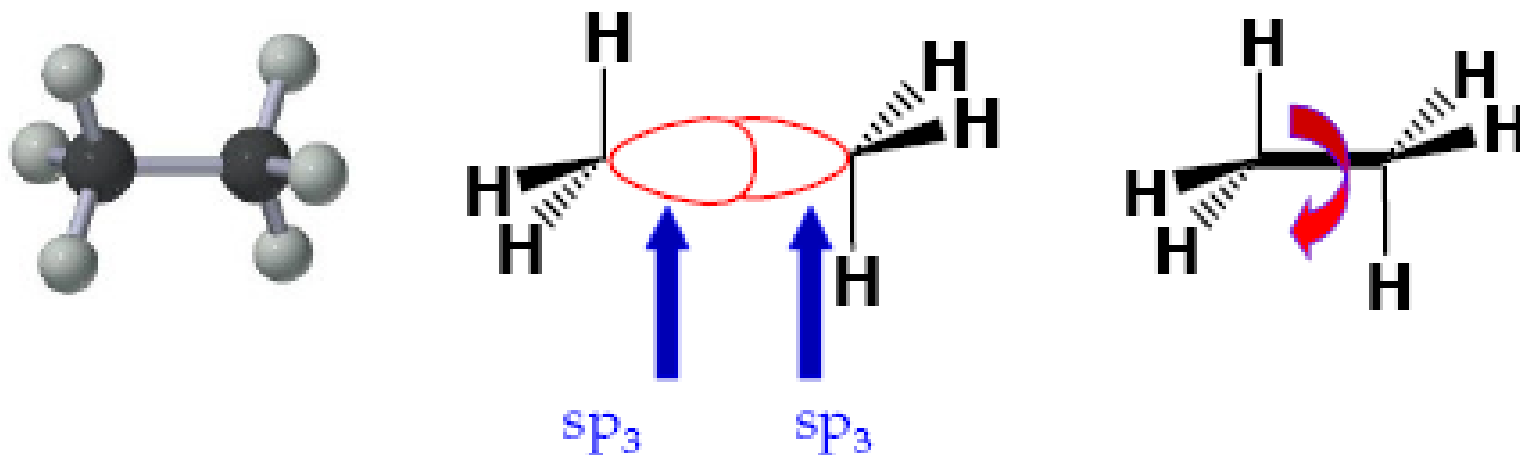
Naming Organic Compounds

We need to make a distinction between different types of Carbons, Hydrogens, or Nitrogens

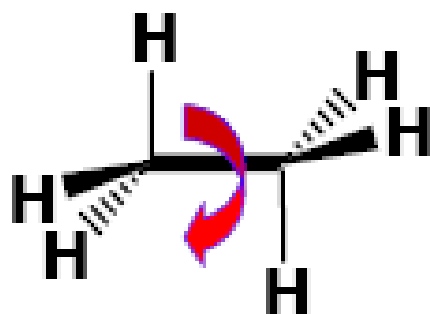


Conformations of Alkanes

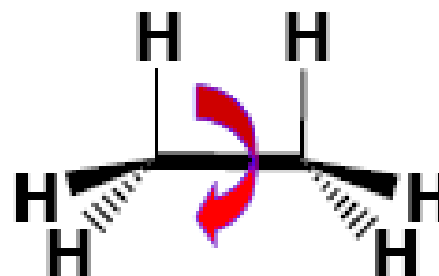
Let's look again at ethane....



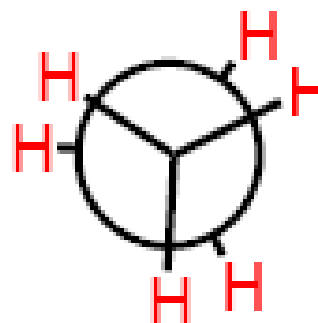
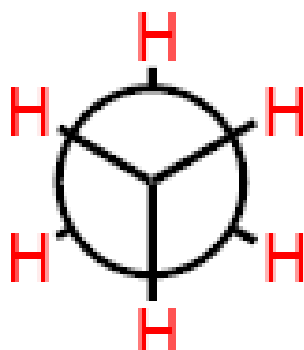
Conformational Isomers



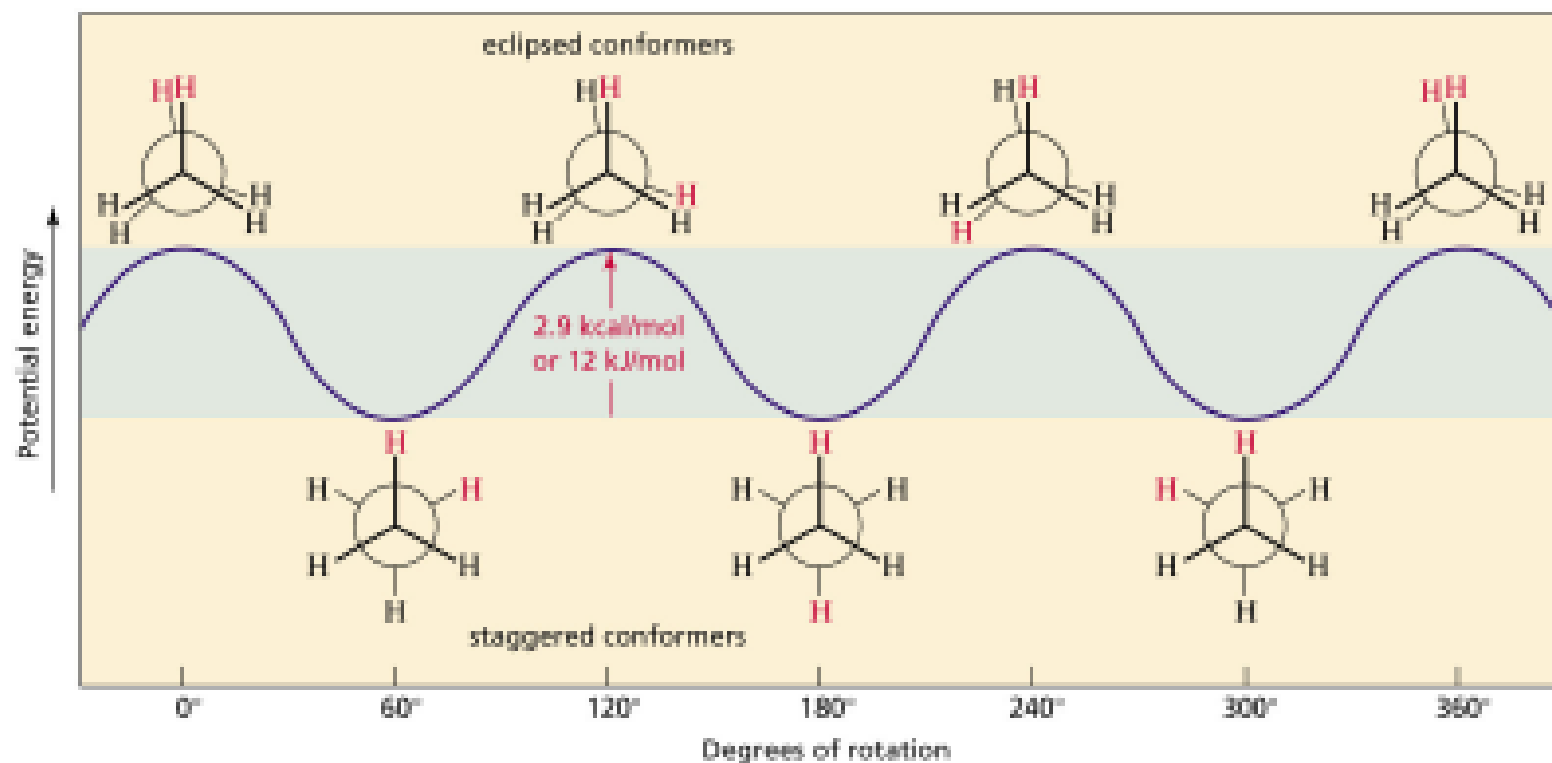
staggered conformer



eclipsed conformer



Conformations of Ethane



For Next Time....

- ▶ Monday More Chapter 4 (4.1 – 4.7)
 - ▶ BRING YOUR MODEL SET!
- ▶ Homework Problems Chapter 3
#1,4,7,15,34,35,37,39,43,44, 47
- ▶ Homework Problems Chapter 4
- ▶ #1, 6, 10, 19, 25, 28, 36, 43, 48, 51,52, 63