

Today

Sections 3.8 – 3.10
Structures and properties of organic molecules

Sections 3.11 – 3.15
Rotation about single C–C bonds and
conformations of cyclohexanes

Next Class

Sections 4.1 and 4.2
Isomers and the stereoisomers of alkenes

Sections 4.3 - 4.8
Chirality

Bring Modeling Kits to Class

Newman Projections

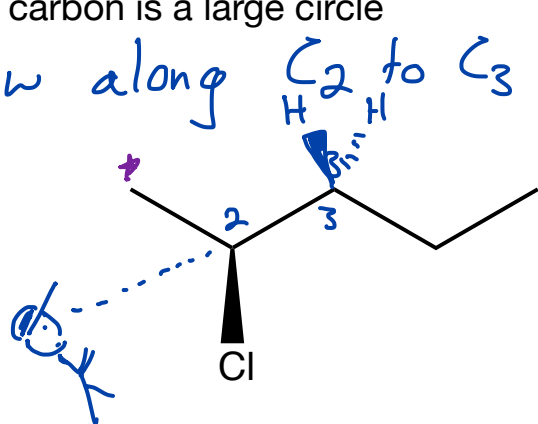
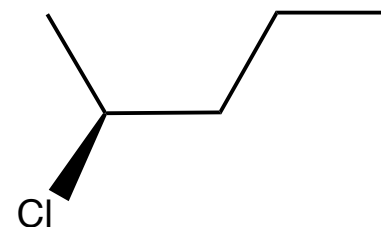
Drawn as though one is looking along a bond

Front carbon is a where three bonds come together

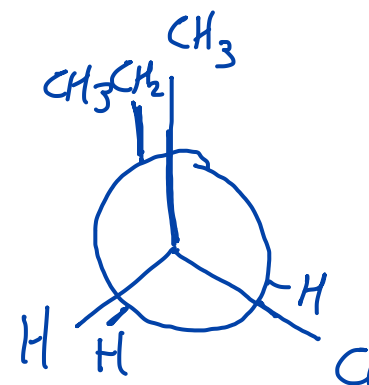
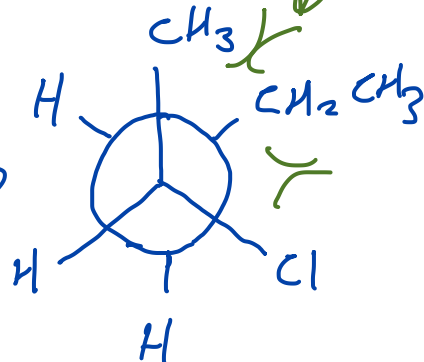
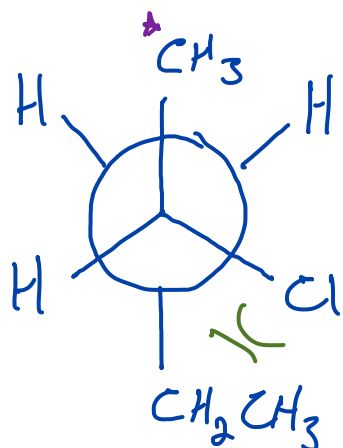
Back carbon is a large circle

view along C_2 to C_3 bond

eclipsed
butane



gauche
interactions
raise
energy

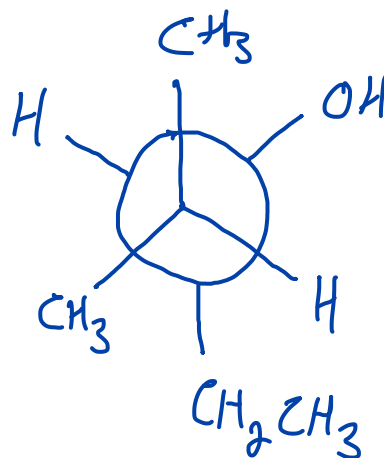
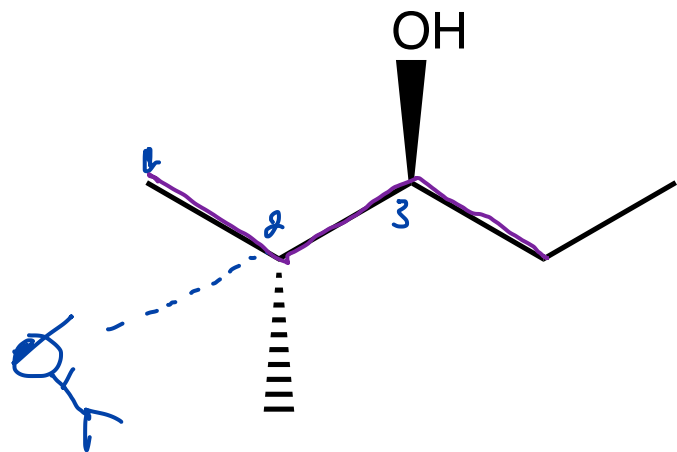


this is one of many possible

<https://www.westfield.ma.edu/cmasi/organic/newman/newman-plain.html>

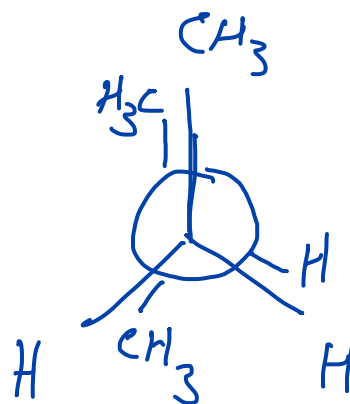
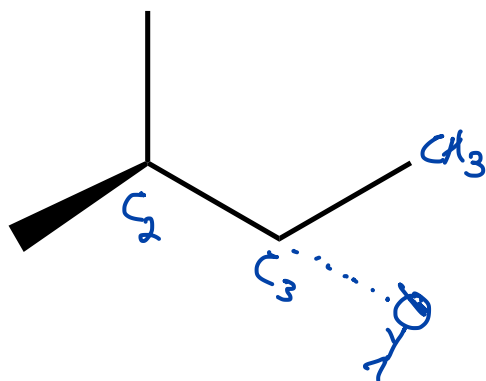
rotamers

Draw the Newman projection along the C_2 to C_3 bond in the following structure



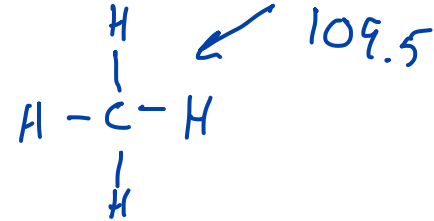
1. Find C_2-C_3 bond
(draw person)
2. draw Y or λ and place groups

Draw the Newman projection along the C_3 to C_2 bond in the following structure

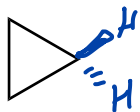


3. staggered
or
eclipsed?
4. draw circle + lines
5. place groups

Ring Strain and the Structure of Cyclohexane



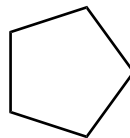
not planar



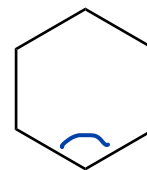
60



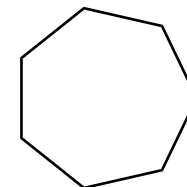
90



108

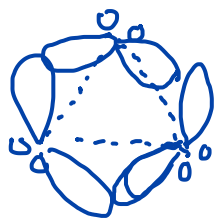


120



128

60 vs 109.5



very reactive too!

not planar so these are not the bond angles



bond angles are so far from "ideal" that cyclopropanes are explosively reactive