

(20) **Today**

3.6 - 3.7 Conformations of Alkanes

Next Class (21)

Chap 4 Cycloalkanes

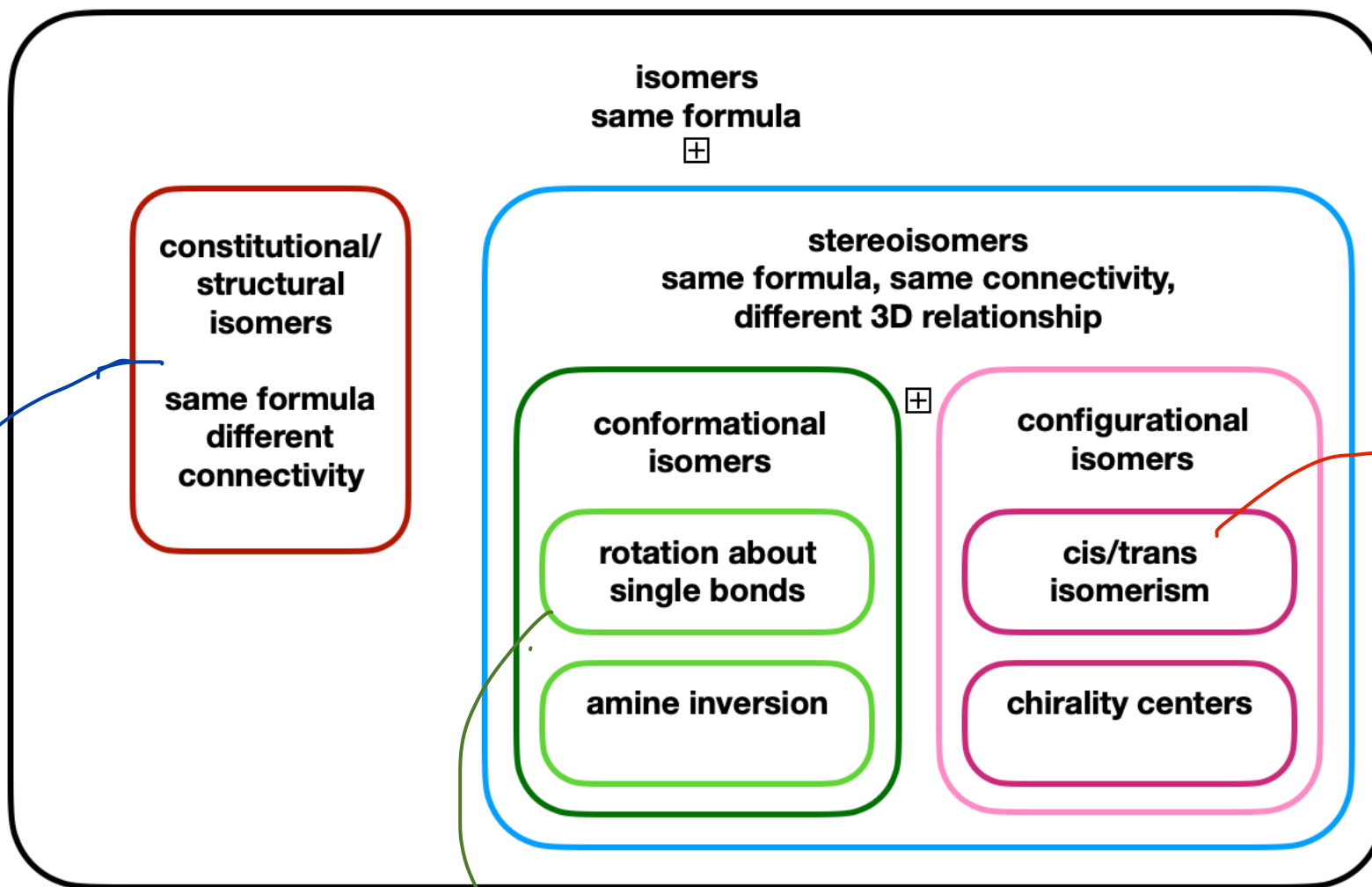
(22) **Second Class from Today**

Chap 4 Cycloalkanes

Third Class from Today (23)

Chap 5
Stereochemistry at Tetrahedral Centers

Isomers



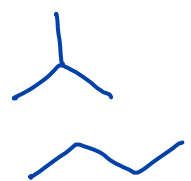
can't be
interconverted

by
rotation

bonds
would
have
to break

rotation around bonds
changes one version
to another

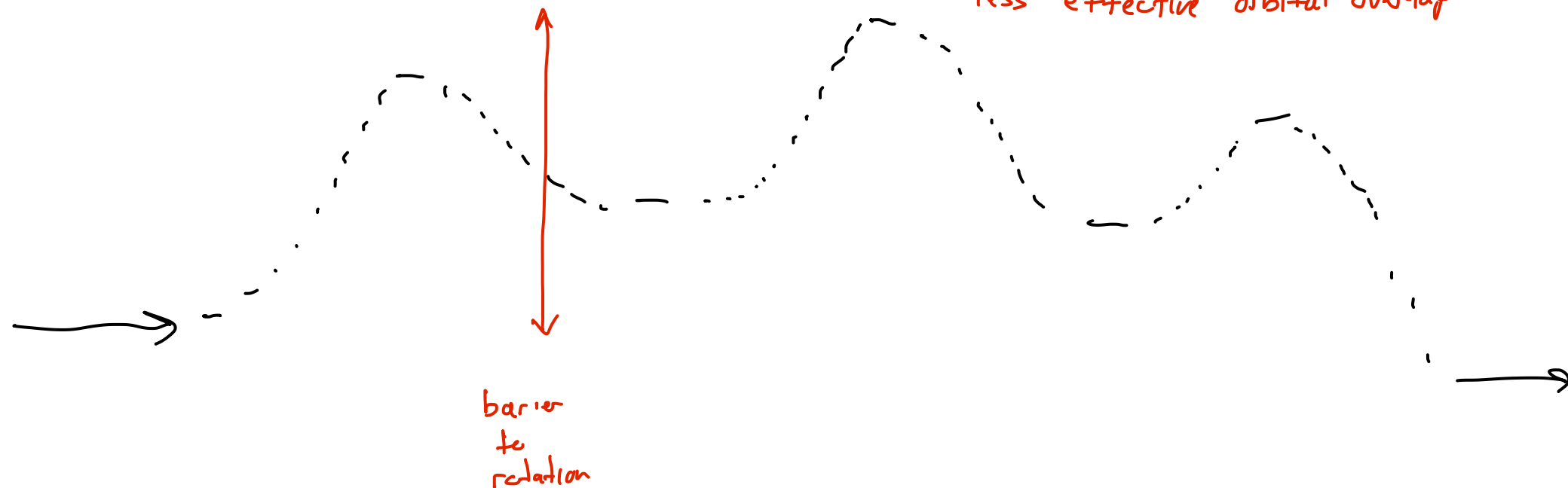
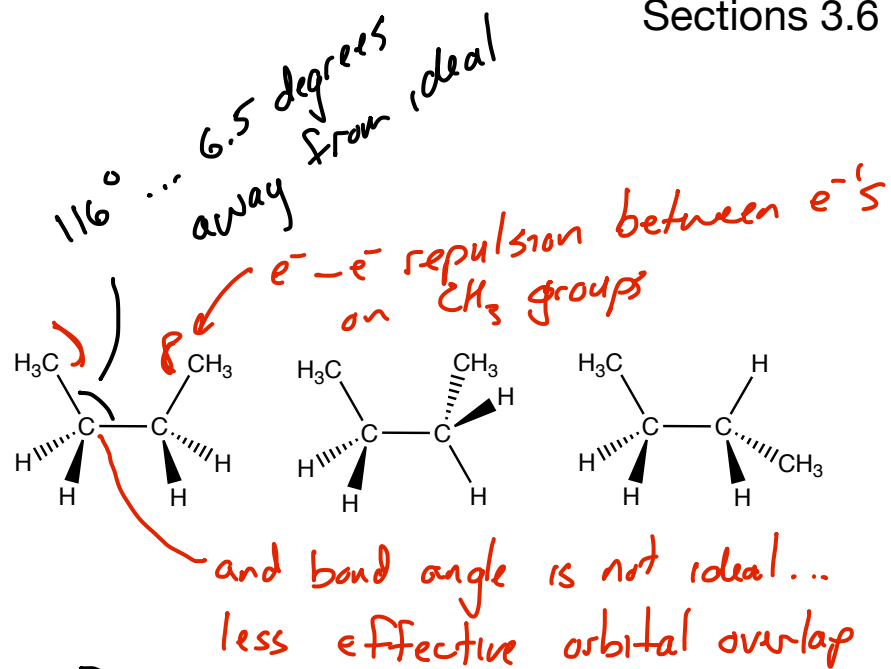
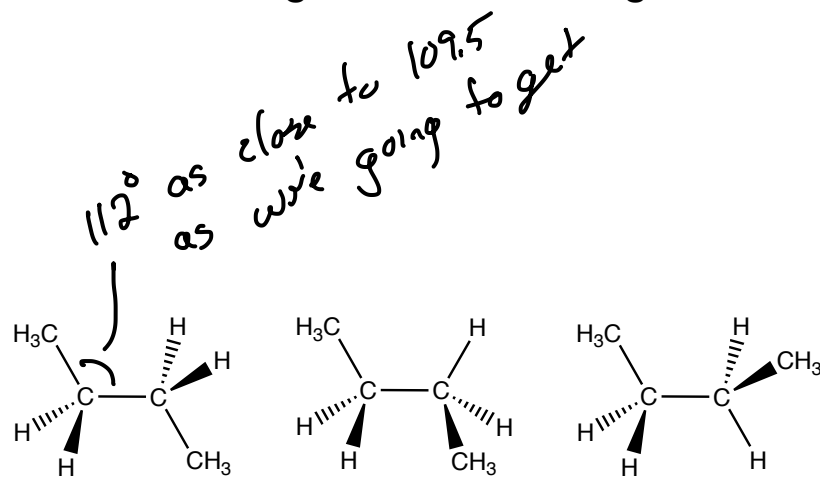
C_4H_{10}



at extremely low temps some rotational motions can be frozen out

Rotation around Single Bonds and Angle Strain

Sections 3.6 - 3.7

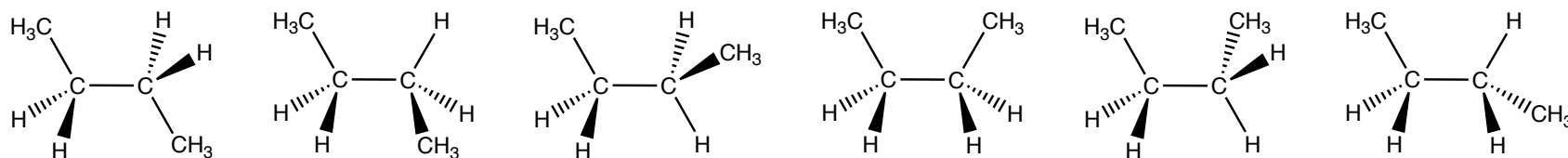


<https://www.westfield.ma.edu/cmasi/organic/newman/newman-plain.html>

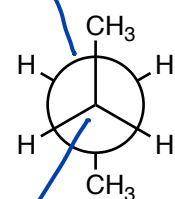
a collection of rotamers

Rotation around Single Bonds: Newman Projections

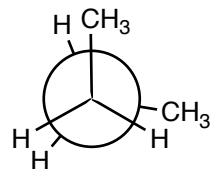
Sections 3.6 - 3.7



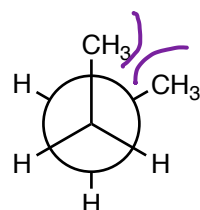
back carbon



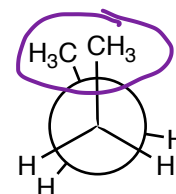
front carbon



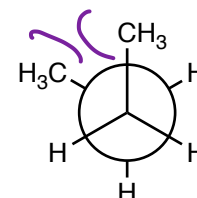
eclipsed



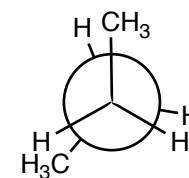
staggered



eclipsed



staggered



eclipsed

staggered

anti configuration

gauche interaction

between large (non-H)

group causes

more e⁻-e⁻ repulsion so a bit higher in E than other staggered geometry

largest groups bumping into each other

syn arrangement

large groups in the same plane + side

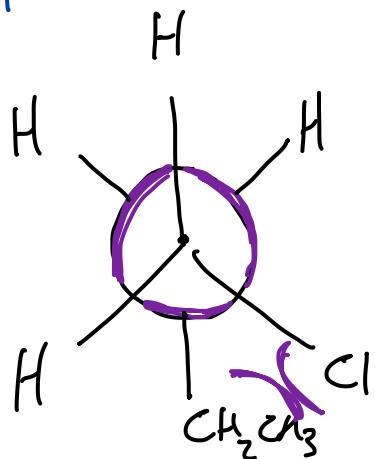
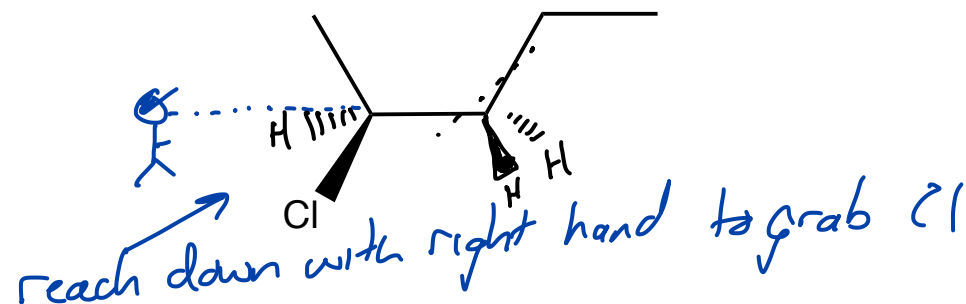
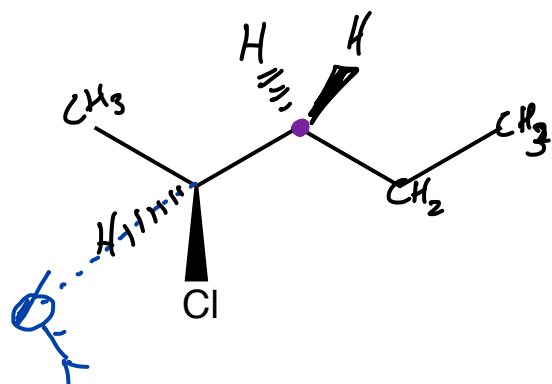
Showing 3-D Relationships (stereochemistry) Using Newman Projections

Sections 3.6 - 3.7

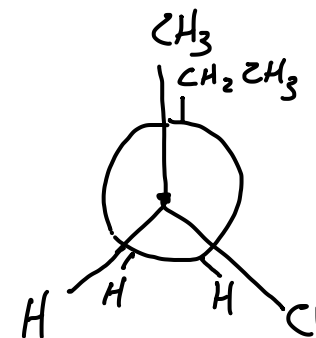
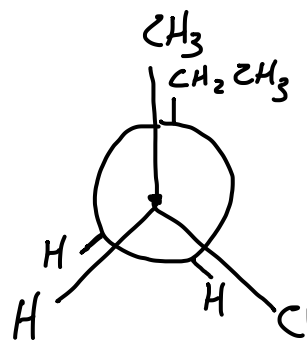
Drawn as though one is looking along a bond *view along 2 to 3*

Front carbon is a where three bonds come together

Back carbon is a large circle

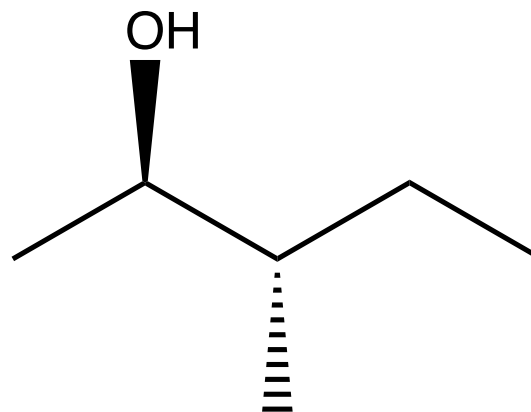
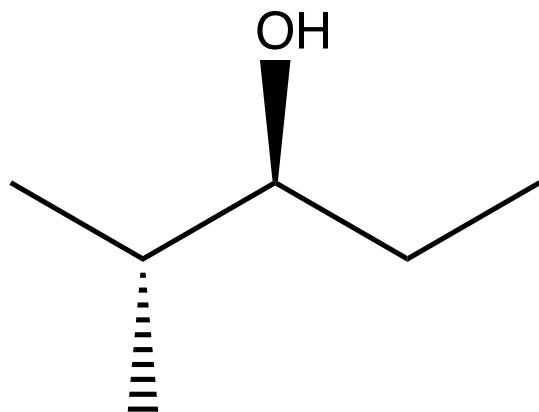


staggered



eclipsed

Draw the Newman projection along the C₂ to C₃ bond in the following structure



Draw the Newman projection along the C₃ to C₂ bond in the following structure

