

(24) **Today**

Sections 4.3 – 4.8 Stability of Cycloalkanes
and Conformations of Cyclohexanes

Sections 5.1 – 5.5
Chirality and Determining the Configuration of
Chiral Centers

(26) **Second Class from Today**

Sections 5.6 – 5.12
Diastereomers, N,P, and S, and Prochirality

Chap 6

Next Class (25)

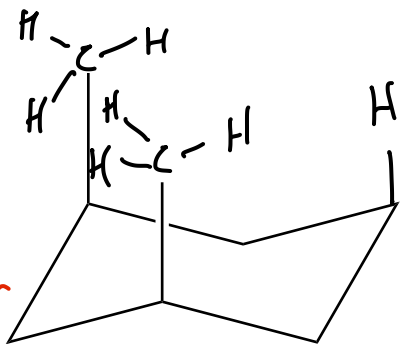
Sections 5.1 – 5.5
Chirality and Determining the Configuration
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Sections 5.6 – 5.12
Diastereomers, N,P, and S, and Prochirality

Third Class from Today (27)

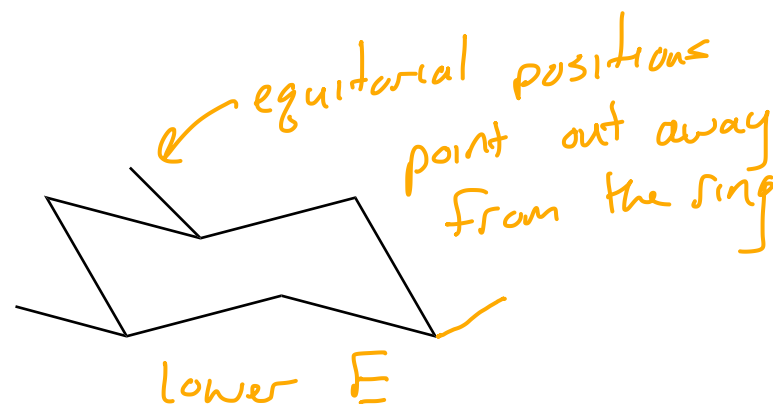
Chap 6

cis arrangement of CH_3



when the ring flips
all axial positions +
equatorial positions
change

cis arrangement



different conformations of the same molecule have different energy levels based on the degree of $e^- - e^-$ repulsion experienced by the substituents

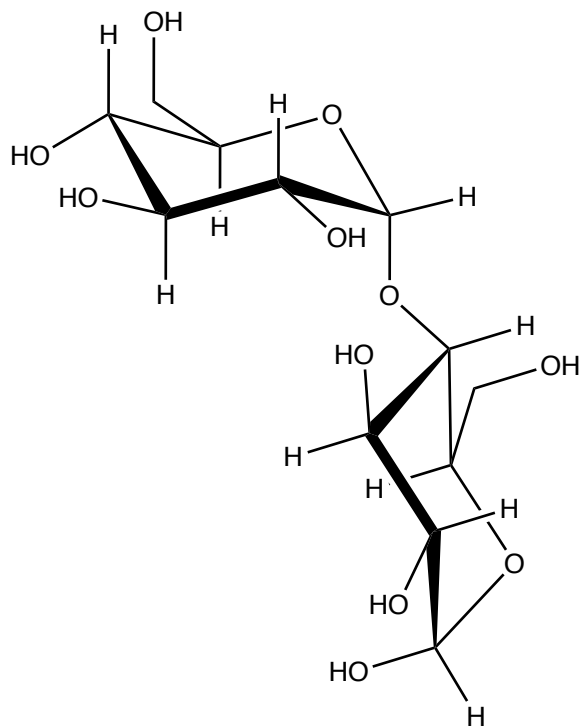
axial positions are the most crowded

$e^- - e^-$ repulsion from other axial positions

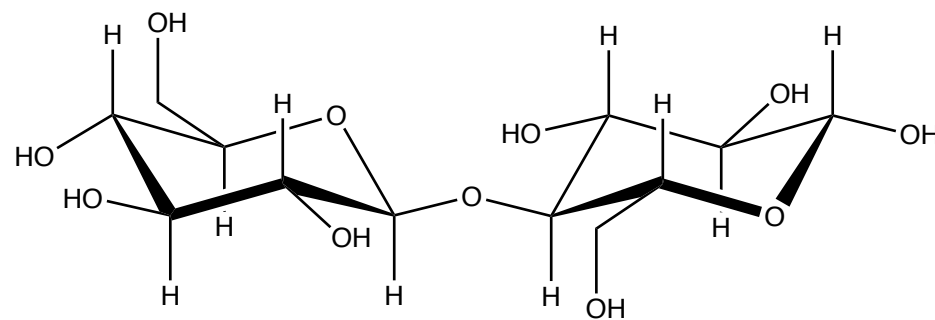
$e^- - e^-$ repulsion from gauche interactions with ring CH_2 's

the larger the substituent, the higher the E

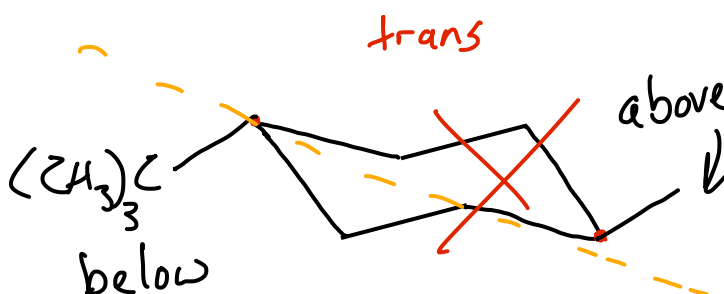
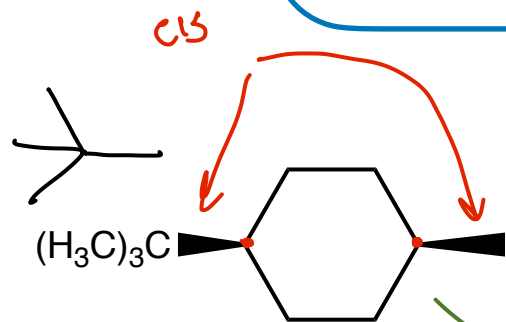
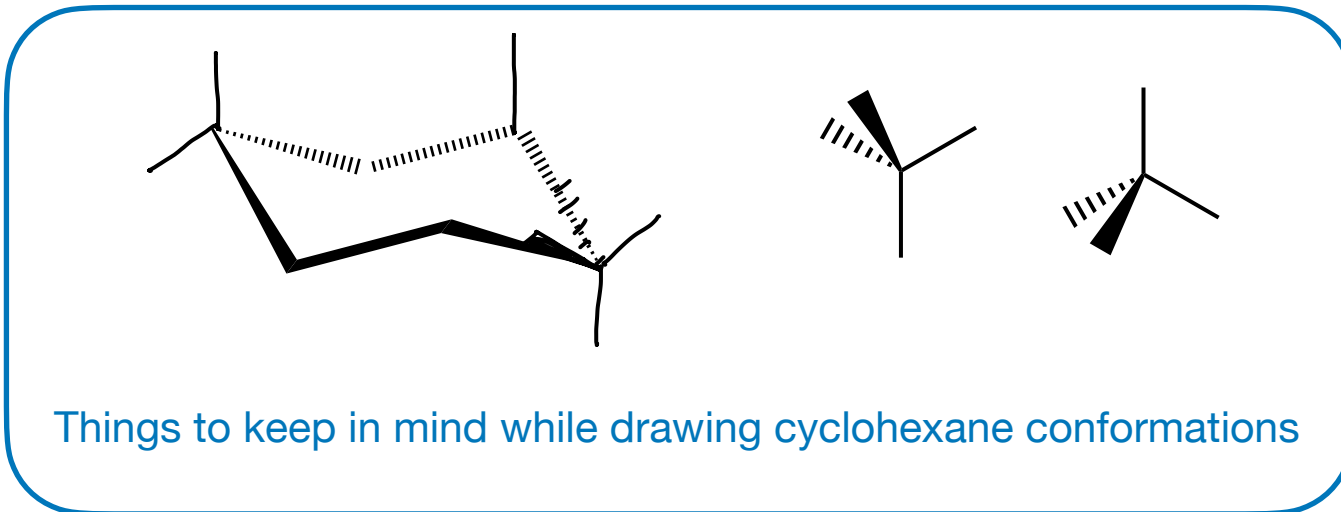
https://www.westfield.ma.edu/cmasi/organic/cyclohexanes/sub_cyclohexanes-plain.html



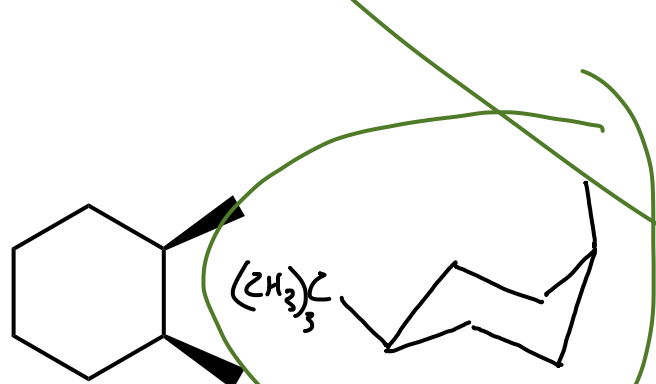
α -1,4 linkage



β -1,4 linkage

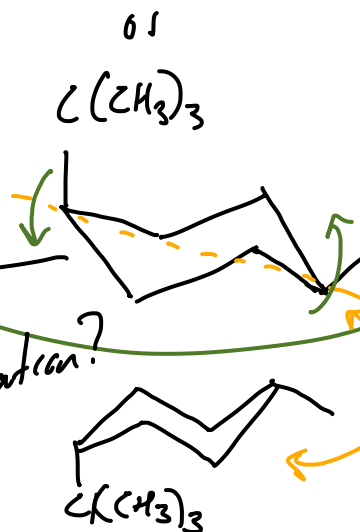


this is a different molecule



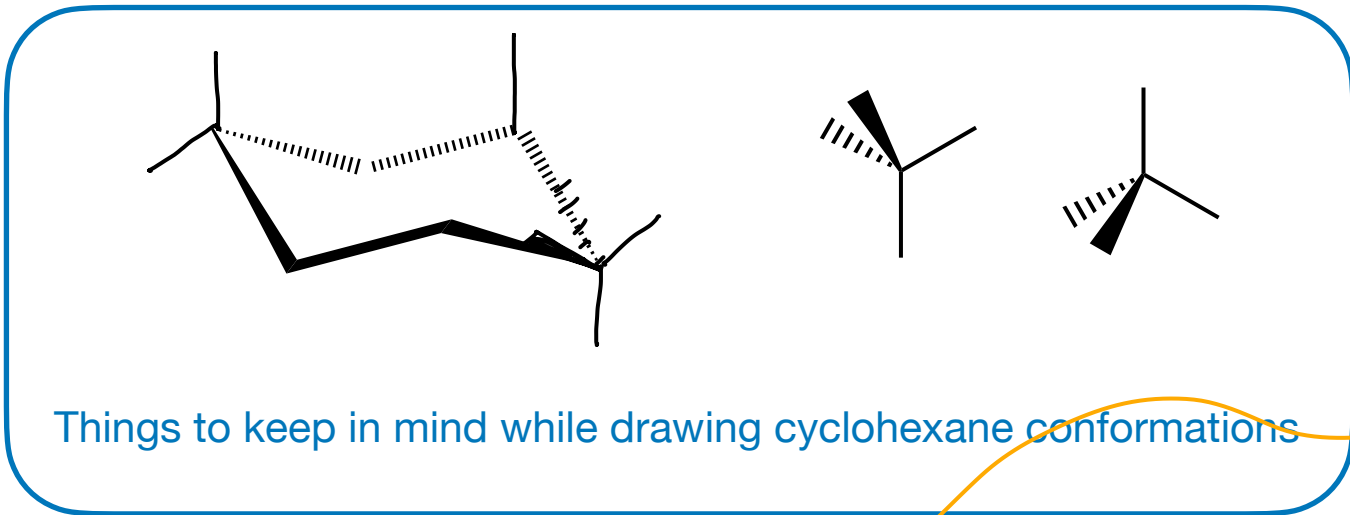
lower E conformation

is there another conformation?

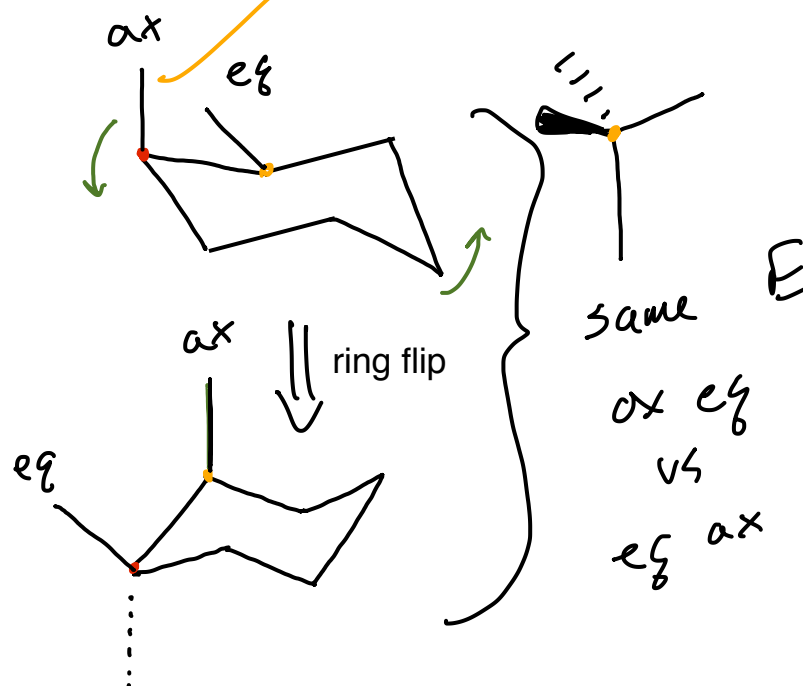
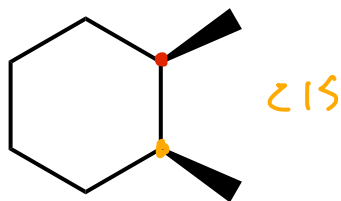
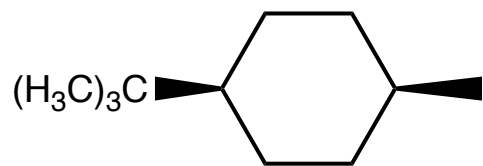


this is a conformation of the molecule

these are different views of the same conformation

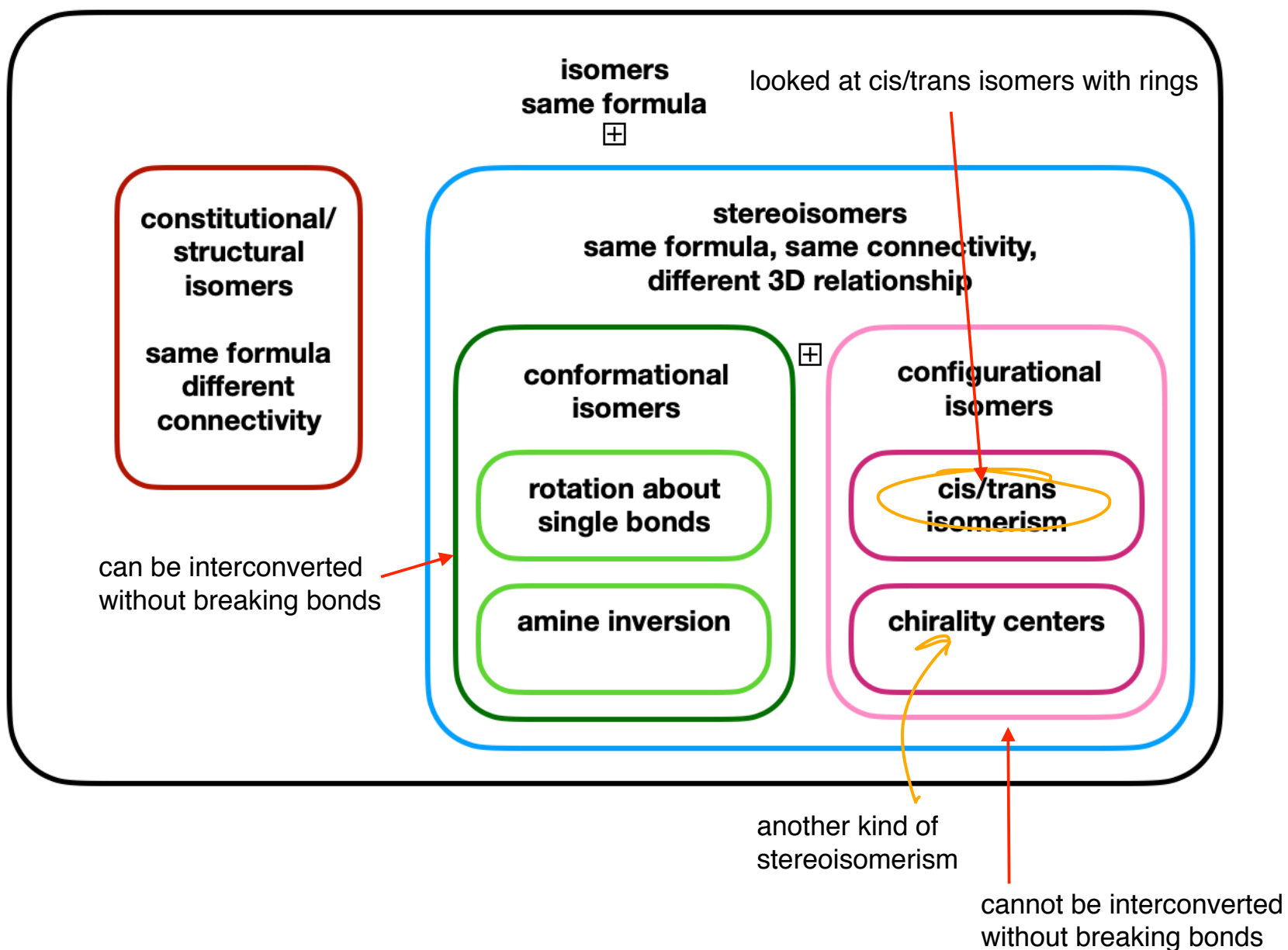


axial positions are straight up or straight down



axial + equatorial are opposite

Isomers



Look down

At your feet....

Correct shoe on the correct foot?

Yes? You've mastered chirality!



righty and lefty
golf clubs



no such thing as
righty and lefty
safety goggles



right and left
roller skates



no such thing as
righty and lefty
baseball bats



righty and lefty
scissors?

You bet! Most
scissors are
designed for
right-handed
use and don't
work as well in
the left hand.