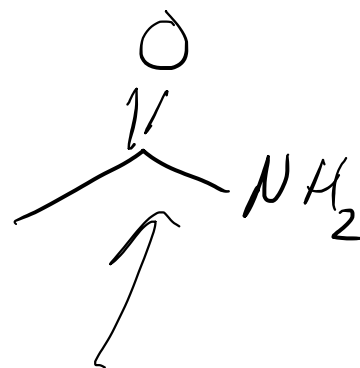
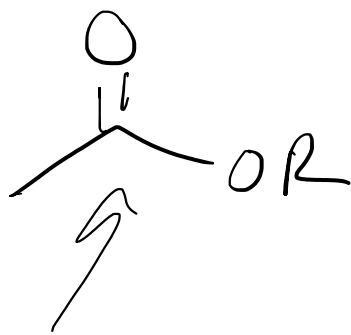


Rework Test 1 by March 8

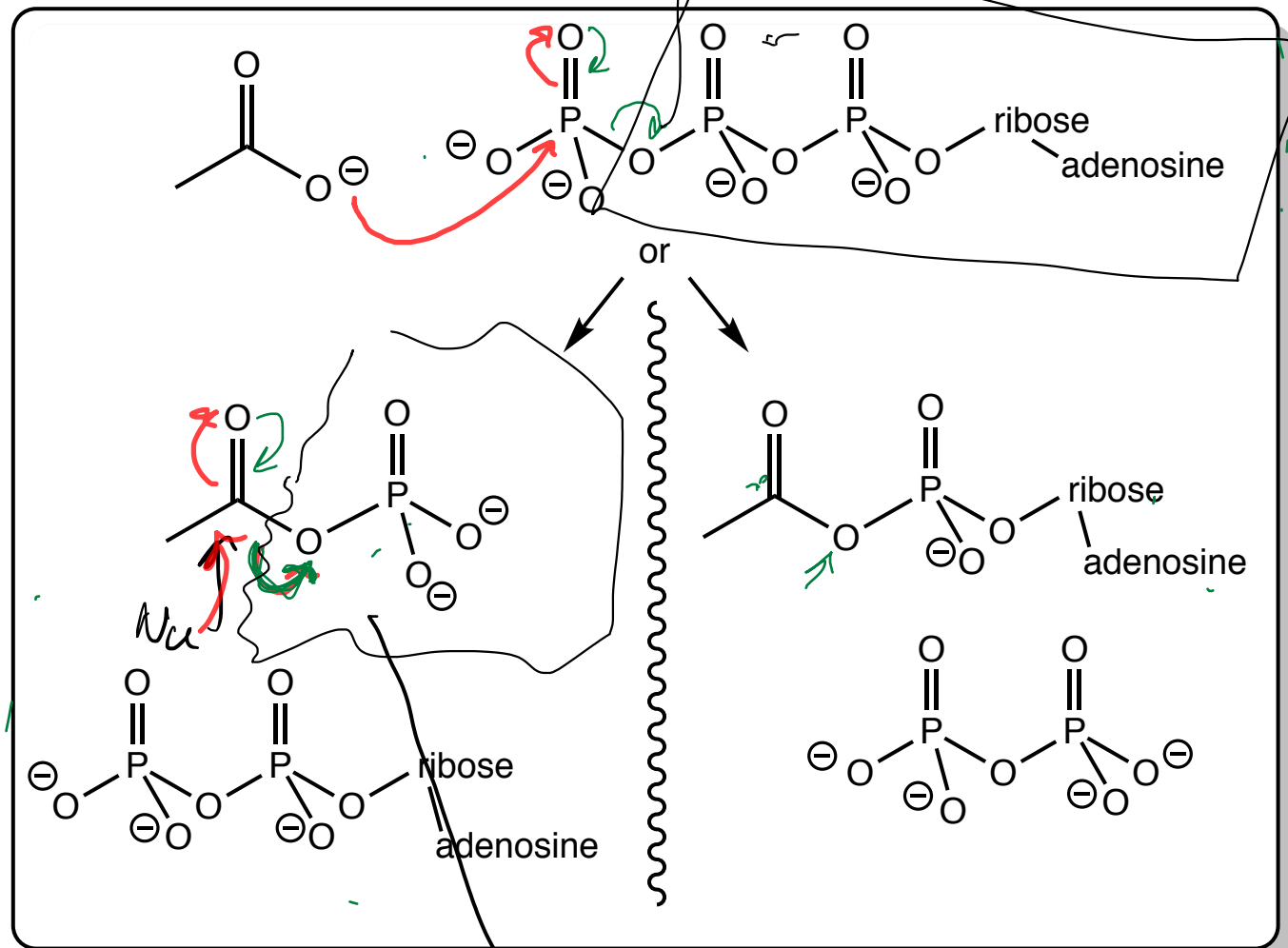
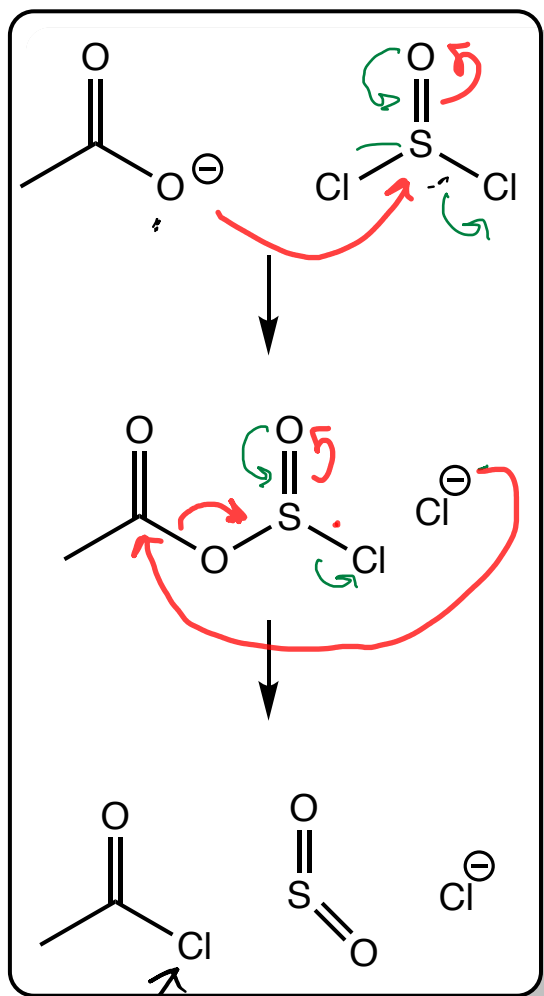
Today 15.18, 15.19, 16.1, 16.2, 16.3

Friday 16.3, 16.4, 16.5, 16.6, 16.9

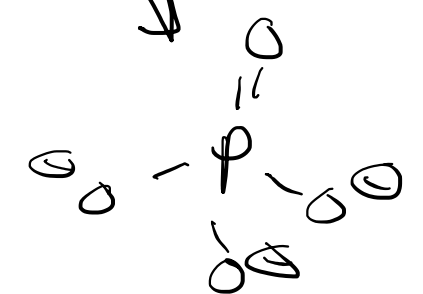


# How Chemists Activate Carboxylic Acids vs How Cells Do It

Section 15.18 & 15.19



Handwritten note:  $\text{O}=\text{S}-\text{Cl}$  similar to  $\text{O}=\text{S}-\text{OH}$

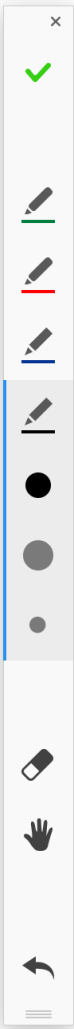
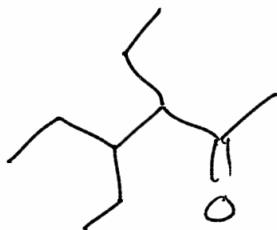
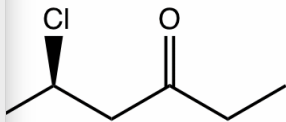
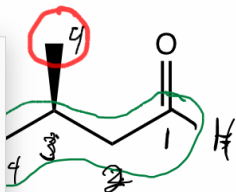




aldehyde

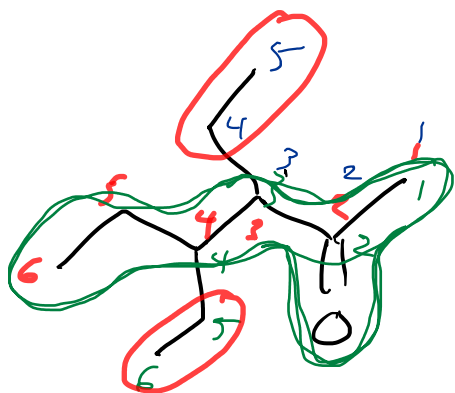
1. find functional group
2. → find longest chain
3. ↘ lose the "e" and add "al"
4. find substituents
5. name + # substituents

- 1 as above
- 2
- 3 lose "e" + add "one"
- 4 add # for location of C<sup>G</sup>  
 give functional group  
 lowest # possible
- 5a ~~name~~ substituents
- 5b name and # substituents



longest chain 6

3,4 - diethyl - 2 - hexanone



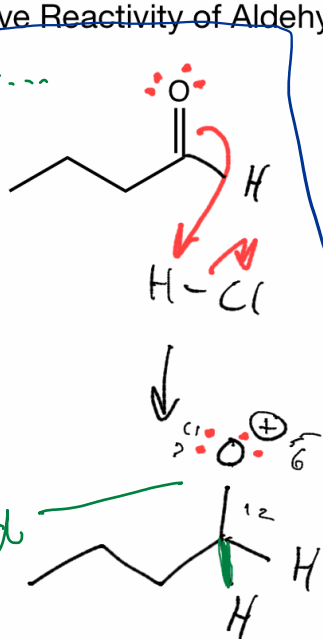
The Relative Reactivity of Aldehydes and Ketones

Section 16.2

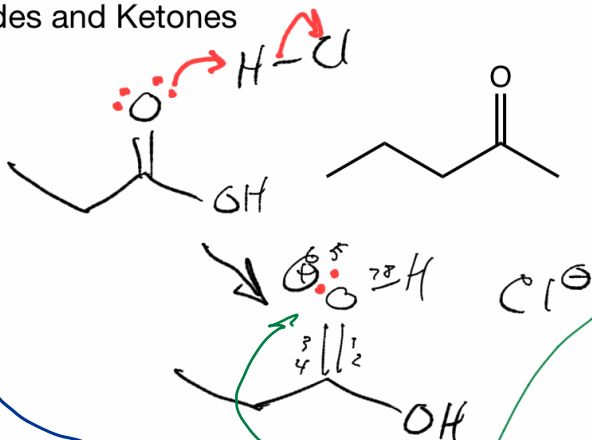
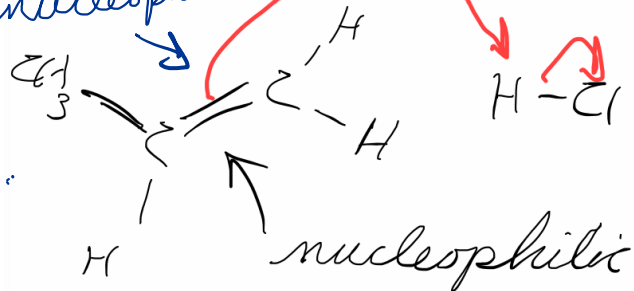
proposal...

what if  $H^+$  added to C atom of  $C=O$ ?

or rep it. That didn't work.

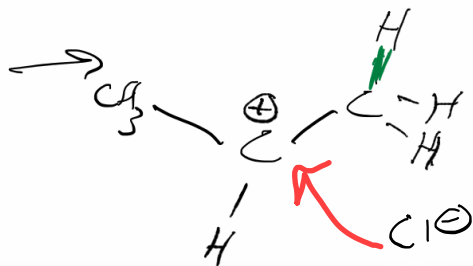


C in  $C=C$  bond nucleophilic, but C in  $C=O$  not



still has a full valence shell

it's  $\delta^+$   
it's looking for  $e^-$

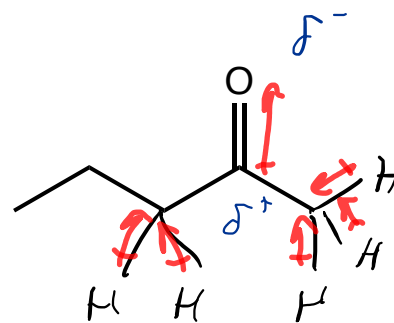
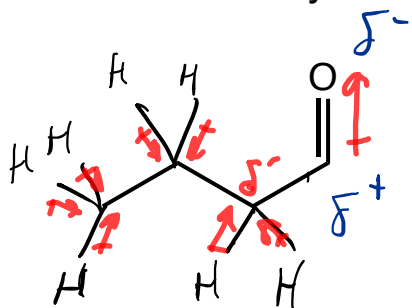


the C on the  $C=O$ ...

electrophilic nucleophilic?

$\delta^-$ ?  
 $e^-$  to share?  
more

# The Relative Reactivity of Aldehydes and Ketones

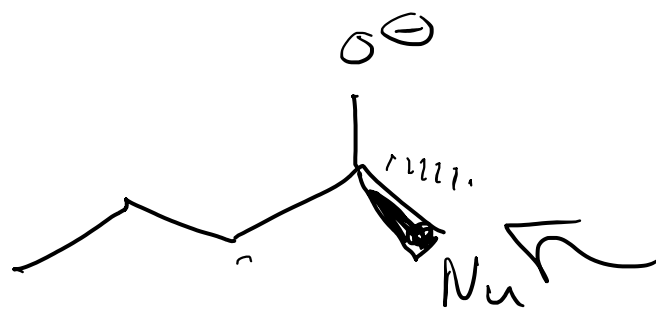


the C on the C=O...  
~~electrophilic~~  
~~nucleophilic?~~

$e^-$  rich neighboring C's push  $e^-$  density toward C of C=O  
 less  $e^-$  rich wants  $e^-$  more  
 more electrophilic

more  $C^2$  pushing  $e^-$  density toward C=O  
 more  $e^-$  rich wants  $e^-$  less  
 less electrophilic

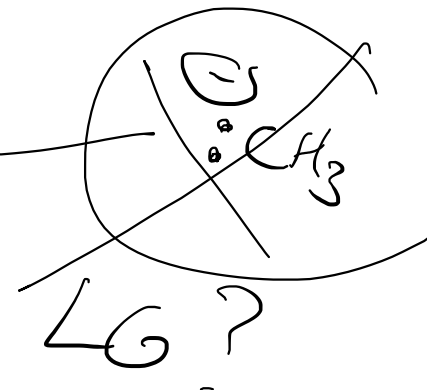
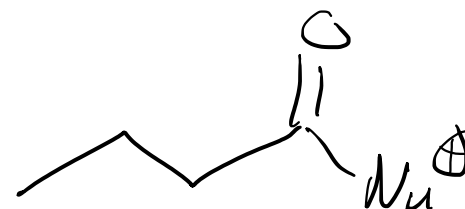
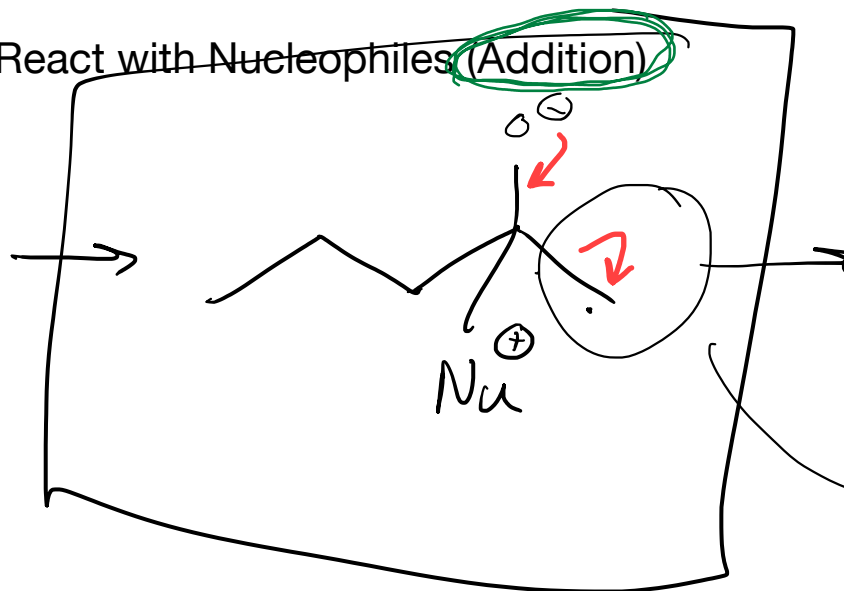
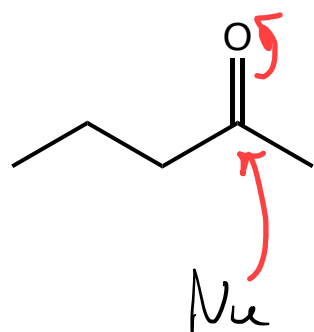
Which has the more  $\oplus$  charge?



steric crowding

# How Aldehydes and Ketones React with Nucleophiles (Addition)

Section 16.3



no LG  
no substitution  
just addition