

## **Chemistry 3**

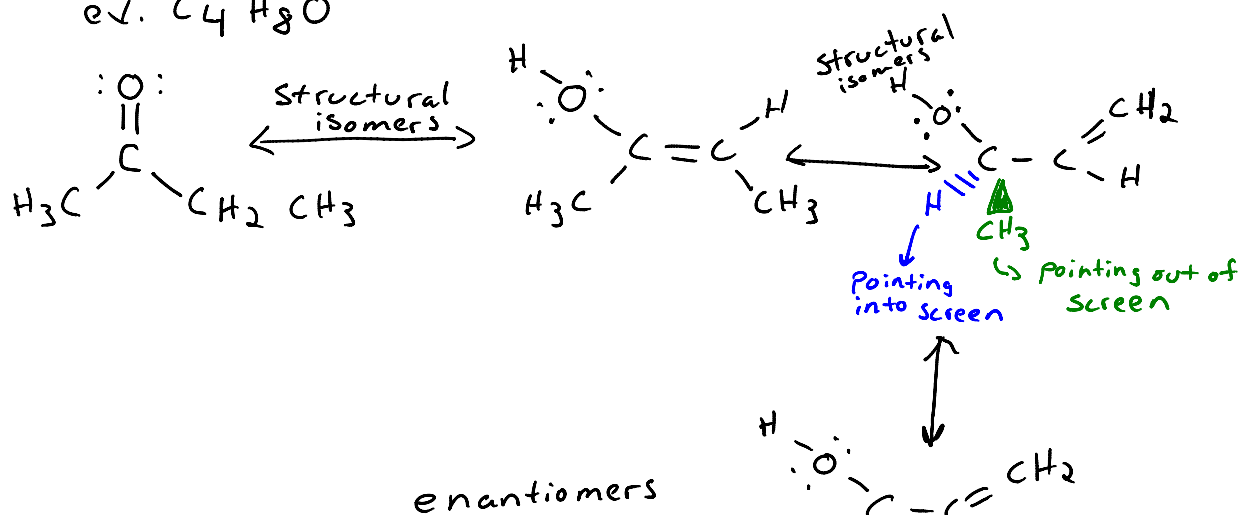
- **iClicker 10A**
- **Isomers**
- **Bond Polarity**
- **Non-covalent bond (H-bond)**
- **Answer to iClicker 10B**
  
- **Due in Lab this week**
  - **Pre-Lab 4**
  - **LEGO Meiosis lab report**
  
- **Register your iClicker**
- 
- **Exam Information**
- **Last names starting with**

## A through E

- 11<sup>th</sup> Floor of Healy
  - Last names starting with
- ## F through Z
- Lipke (here)

Isomers molecules with the same atoms but different arrangements of covalent bonds

ex.  $C_4H_8O$





Bond Polarity - applies to covalent bonds only  
- due to differences in electronegativity (EN)

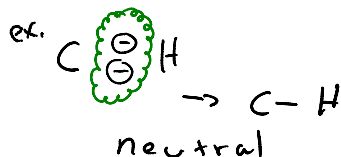
EN = how tightly, an atom holds its outer shell  $e^-$

EN	low	medium	high	very high
	Na, K	C, S, H, P	O, N	Cl, F
		in Bio III		

what happens when 2 atoms form a covalent bond?  
3 possibilities

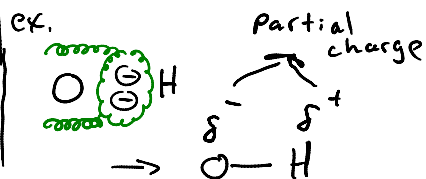
① if atoms have roughly equal EN

share  $e^-$  equally  
→ non-polar covalent bond



② if atoms have med/high EN

$e^-$  shared unequally  
→ polar covalent bond



③ if atoms have very different EN

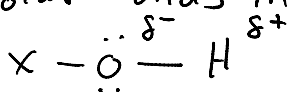
$e^-$  taken by the atom w/ the highest EN

ionic bond

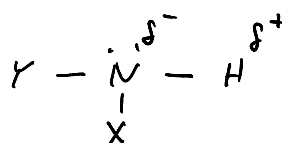


not seen Bio III

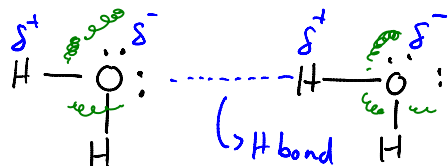
polar bonds in Bio III



and



Partial charges lead to H-bonds → weaker than covalent bonds



H-bond → H is "shared" between the 2 O's

in Bio III H bonds only form between

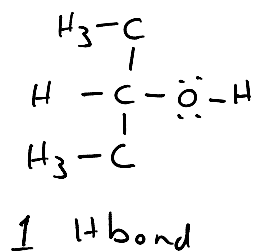
a) Hydrogen Donor = H-covalently bonded to N or O

b) Hydrogen acceptor = lone pair of  $e^-$  on N or O

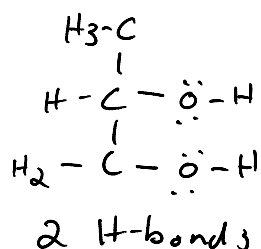
⇒ never C-H → non-polar (neutral)

predict function based on molecular structure

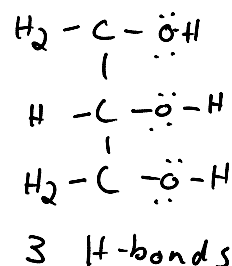
isopropanol



propylene glycol



glycerol



breaking bonds between molecules  $\rightarrow$  H-bonds  
 $\rightarrow$  non-covalent bonds are breaking

more H-bonds  $\rightarrow$  tighter network of molecules

tighter network  $\rightarrow$  more viscous fluid  
↳ "thick"

## Nobel prize in Medicine

research on telomeres & telomerase  
 $\rightarrow$  chromosomes ↳ enzyme

