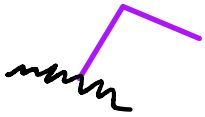
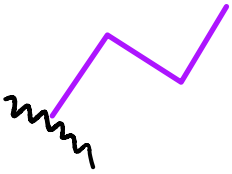
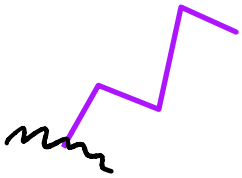
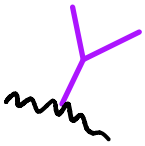
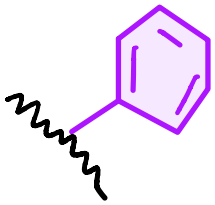
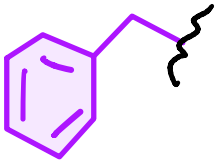
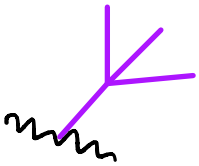
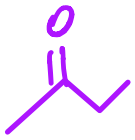
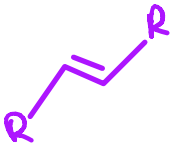
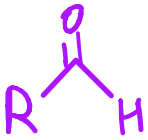
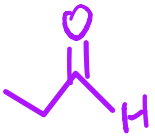
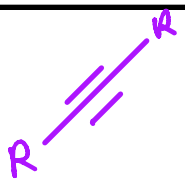
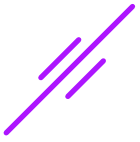
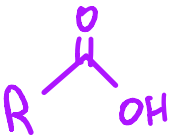
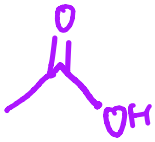
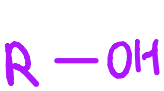
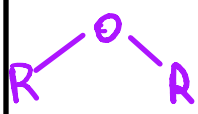
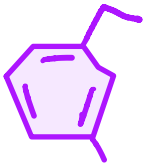
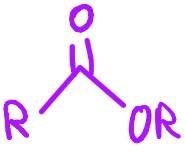
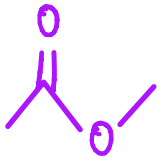
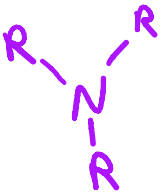
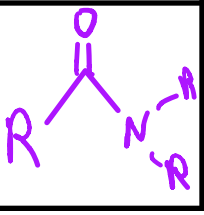
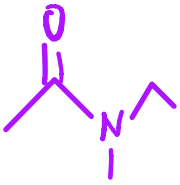
Session 3 Worksheet

Alkyl Functional groups

Methyl		Ethyl	
Propyl		Butyl	
Isopropyl		Phenyl	
Benzyl		Tert-butyl	

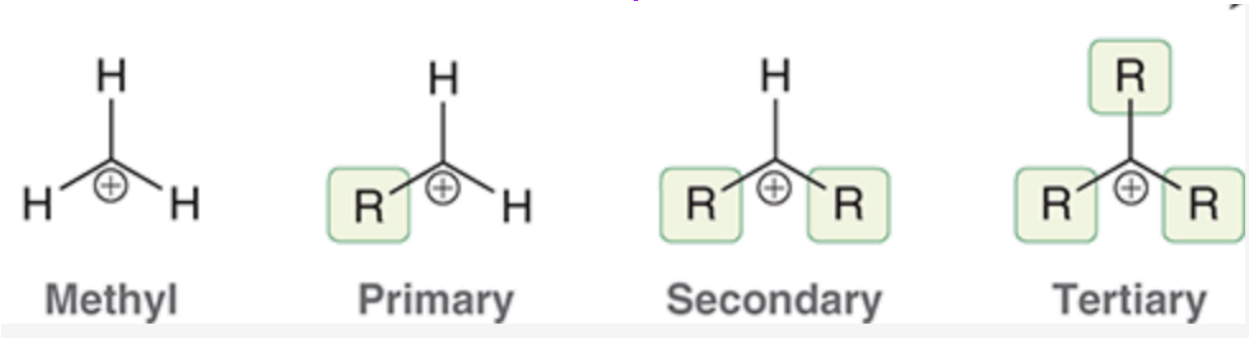
Functional groups study sheet

Alkyl Halide			Nitrile		
Alkane			Ketone		
Alkene			Aldehyde		
Alkyne			Carboxylic Acid		
Alcohol			Ether		
Aromatic/ Arene/ Benzene			Ester		
Amine			Amide		

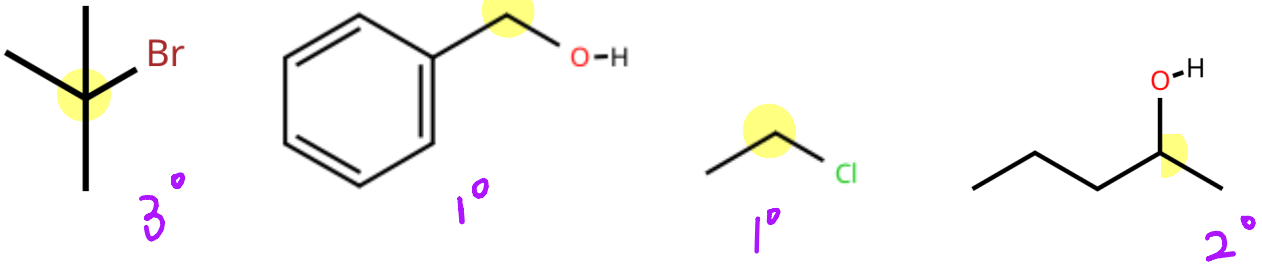
Degree of Substitution

Primary, Secondary, and Tertiary are used to describe the degree of substitution on a carbon of interest (the carbon we're looking at)

It looks at the number of carbons (R groups) bonded to that specific carbon



Are the following carbons of interest in the compounds primary, secondary, or tertiary?



Amines
Look at the number of R groups bonded to the actual Nitrogen atom

What is the geometry and bond angle of amines?

trigonal pyramidal and 108.7°

Dipole Moment

Polar Covalent Bonds:

- A bond where the EN values of 2 atoms are between 0.5 and 1.7

Dipole Moment:

- An indicator of polarity in a compound
- δ^- and δ^+ charges shared between atoms

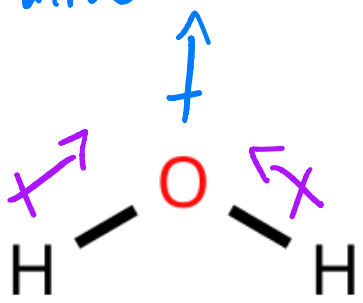
Expressed in debye (D)

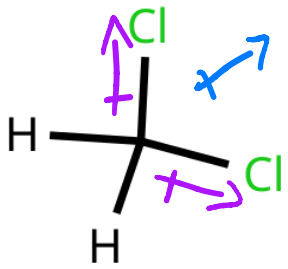
Net Dipole:

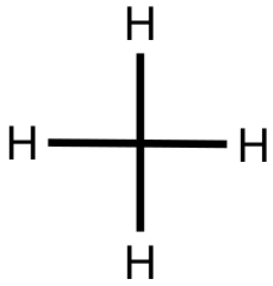
- The overall movement of a compound

Label the partial charges and draw the dipole moment on the compounds below:

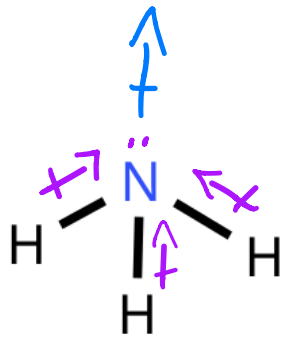
■ = net dipole

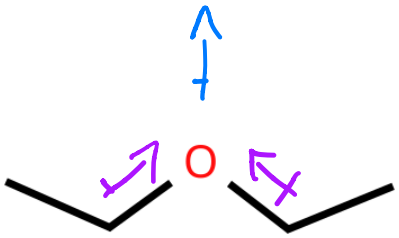


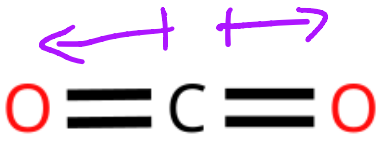




no net dipole



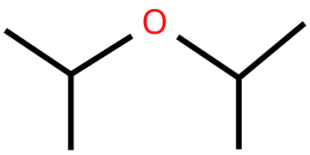




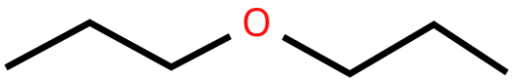
no net dipole

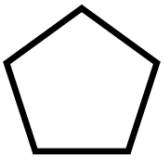
Intermolecular Forces Practice

Determine which of the 2 compounds has the higher bp:

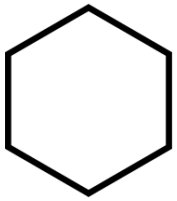


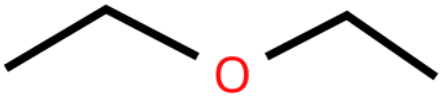
higher



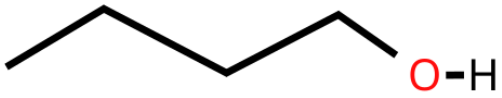


higher





higher



higher