Size and Shape of Molecules: determined by bond lengths and bonding type
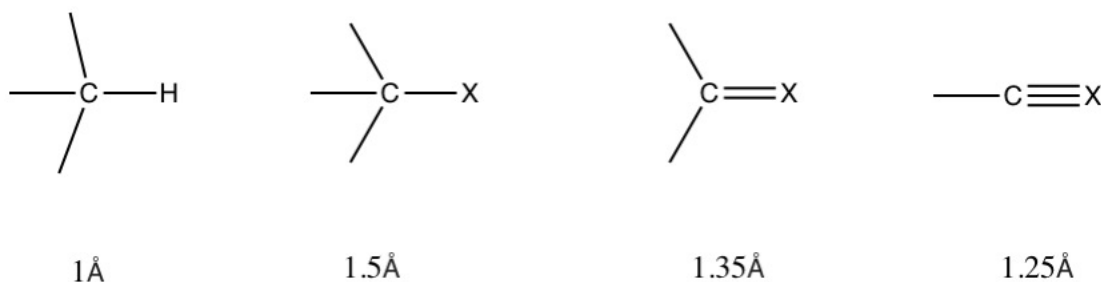
NOTE THE FOLLOWING (Estimated bond length between atoms)


| 1Å | 1.5Å | 1.35Å | 1.25Å |

X = C, O, N, F

Representation of Molecules
- Show only electrons in outer (valence) shell
- Non-bonding electrons (lone pairs) may or may not be shown
- Use element symbols, but carbon can be represented by point of angle or end of line
- Hydrogens and bonds to them from carbon are optional; show others.
- Each line in a structure represents 2 e⁻
- Solid wedge (◄━━): Toward you / out of the page
- Dashed wedge (˙˙˙ᴵᴵᴵᴵᴵᴵ): Away from you / into the page

Examples:

Propene:
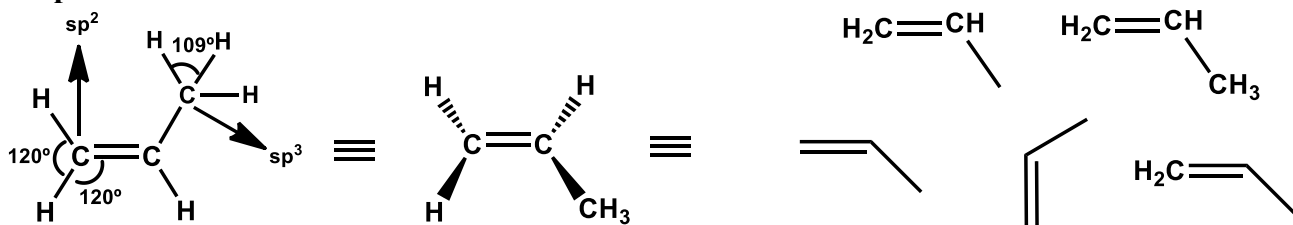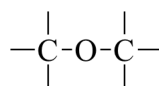
1. Tetrahydrofuran (THF)

3D representation
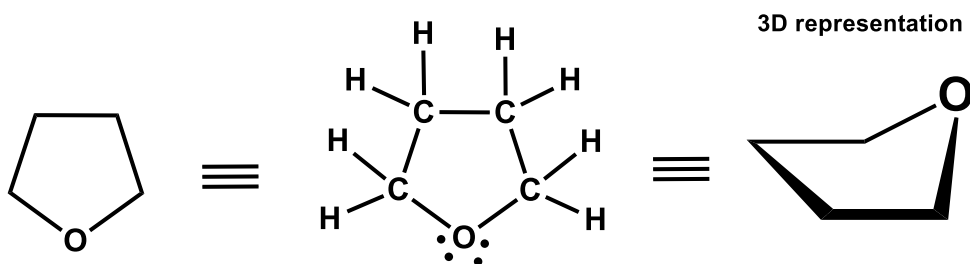
Chemical Formula: C_4H_8O
Molecular Weight: 72,11

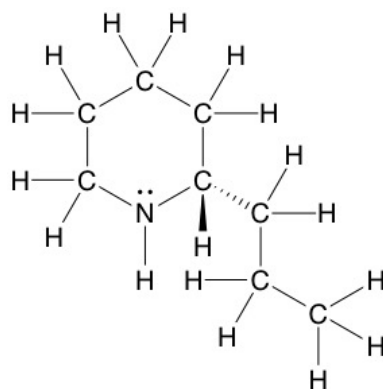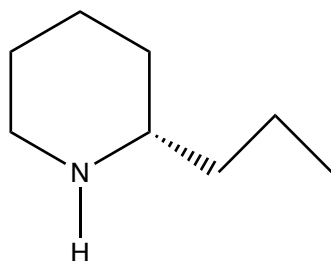NB: Oxygen in the stable uncharged state forms two bonds with 2 lone pairs of electrons

NB: Nitrogen in the stable uncharged state forms three bonds with 1 lone pair of electrons
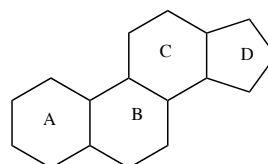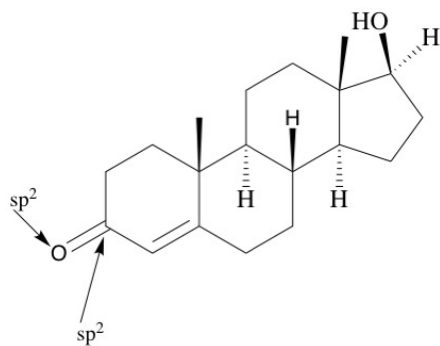
NB: Functional Group in Tetrahydrofuran is ETHER

$$-\overset{|}{\underset{|}{C}}-O-\overset{|}{\underset{|}{C}}-$$

ETHER

2. **Conine (Poison Hemlock)**
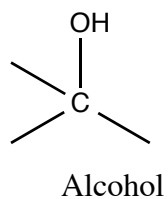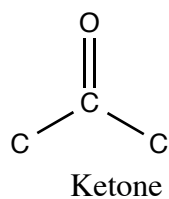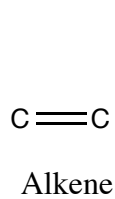
Chemical Formula: $C_8H_{17}N$
Molecular Weight: 127.23
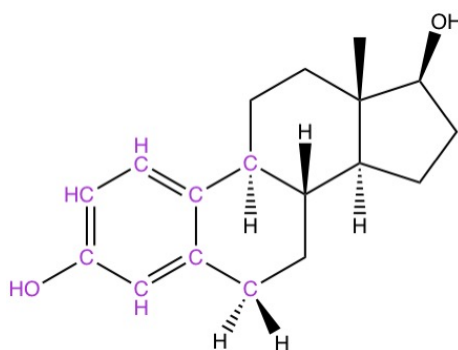
3. Testosterone (a steroid) - C$_{19}$

A Steroid, Ring Nomenclature A, B, C, D etc

CH$_3$ = Methyl
CH$_2$ = Methylene
CH = Methine

Alkene   Ketone   Alcohol

Functional groups in testosterone (alkene and ketone and alcohol)

4. Estradiol - C$_{18}$

Female hormone
All purple atoms are in the same plane