NOMENCLATURE OF ORGANIC COMPOUNDS: I.U.P.A.C. METHOD

1. Find the longest chain that contains the main functional group in the compound. This is called the principle chain. If no functional group exists on the compound (alkane) simply find the longest chain. If a choice of longest chain exists, always use the chain with the greatest number of appendages attached to it.

2. Number the principal chain such that the smallest number appears at the <u>functional group</u>. If no functional groups is present number such that the smallest number appears at the <u>first point of difference</u>.

3. If appendage groups are present, create an alphabetized list of the appendage names, based on the first letter of the name of the appendage (see list on reverse).

4. If more than one type of appendage is present, use the prefixes di, tri, tetra, penta, hexa, etc. on the appendage name to indicate how many of that type of appendage is present.

5. <u>Each</u> appendage must be preceded by a number indicating its point of attachment to the principal chain. This is called a locant number. In a case where there is more than one appendage of the same type <u>one number</u> must be shown for <u>every</u> appendage even if the same number is used twice.

6. All numbers are separated by commas, numbers and letters are separated by dashes.

7. The name of the principle chain is one word and has two parts. The prefix of the name is based on the length of the principle carbon chain. The suffix of the name is based on the main functional group on the chain.

# OF CARBONS	Prefix
1	meth/
2	eth/
3	prop/
4	but/
5	pent/
6	hex/
7	hept/
8	oct/
9	non
10	dec/

FUNCTIONAL GROUP	Suffix
alkane	/ane
alkene	/ene
alkyne	/yne
alcohol	/anol
aldehyde	/anal
ketone	/anone
carboxylic acid	/anoic acid
ester	/anoate

8.   To show the location of the main functional group provide a
     number just before the name of the principal chain. If the
     functional group is an aldehyde, carboxylic acid or ester, by
     default it must be located at carbon #1 (i.e. these functional
     groups are always terminal to the principle chain). Since this
     is always the case, the locant number (-1-) is not shown.

9.   Organize the entire name, appendages first in due alphabetical
     order (based on the appendage name, not the prefix of the
     appendage) with all necessary numbers in place, principal chain
     name last. This will require practise.

11. All names should be unambiguous (one name only for every
     compound) if this system is used properly.

12. When naming ester, the alcohol portion of the ester is named
     using the common name of the alcohol group as a separate word
     before the ester principle chain name.

propyl

ethyl

isopropyl

methyl

butyl

secbutyl

isobutyl

t-butyl

fluoro   chloro

F   Cl

Br   I

bromo   iodo