

Name: Key
 Blk: _____ Date: _____

Chemistry 11
 Organic Chemistry
 Lesson #2 NAMING BRANCHED HYDROCARBONS

In order to name a single chained hydrocarbon you have to understand that there can be attachments made to any carbon in an organic molecule,

It is these attachments that change the name of the structure. The first type of attached group that we are going to learn are called ALKYLS,

An ALKYL is simply an ALKANE that has one less hydrogen atom, This missing hydrogen frees up a bond and allows it to attach itself to the organic molecule,

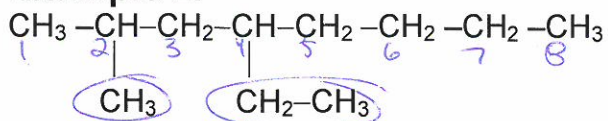
When naming an **ALKYL**, change the "ANE" ending of the alkane to "YL"

*

Fill in the following table with the appropriate **expanded structures**

NAME	# of C	FORMULA
METHYL	1	$\begin{array}{c} \text{H} \\ \\ \text{H}-\text{C}- \\ \\ \text{H} \end{array}$
ETHYL	2	$\begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{H}-\text{C}-\text{C}- \\ \quad \\ \text{H} \quad \text{H} \end{array}$
PROPYL	3	$\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \\ \quad \quad \\ \text{H}-\text{C}-\text{C}-\text{C}- \\ \quad \quad \\ \text{H} \quad \text{H} \quad \text{H} \end{array}$
BUTYL	4	$\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \\ \quad \quad \quad \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{C}- \\ \quad \quad \quad \\ \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \end{array}$
PENTYL	5	$\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \\ \quad \quad \quad \quad \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{C}- \\ \quad \quad \quad \quad \\ \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \end{array}$
HEXYL	6	$\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \\ \quad \quad \quad \quad \quad \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{C}-\text{C}- \\ \quad \quad \quad \quad \quad \\ \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \end{array}$

Example 2:

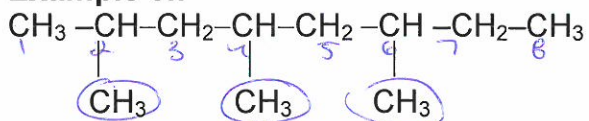


4-ethyl-2-methyloctane

ANOTHER RULE: if the SAME alkyl group is repeatedly attached:

1. list each attached carbon and separate with a comma
2. use the latin prefix in front of alkyl name to indicate
3. the number present
ie 2-di, 3-tri, 4-tetra

Example 3.:



2,4,6-trimethyloctane

HOMEWORK: QUESTIONS #2 + #3