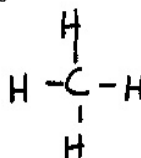


Drawing Hydrocarbon Structures

Alkanes: Straight Chain Hydrocarbons

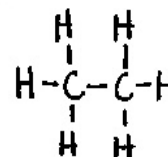
- Draw Methane:

Methane



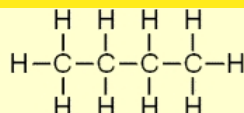
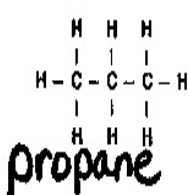
- Draw Ethane:

Ethane



Drawing Alkanes:

- Draw Propane
- Draw Butane



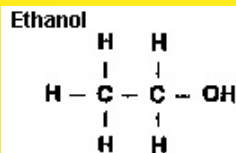
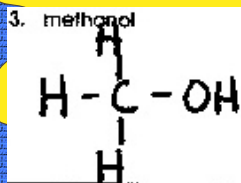
Alcohols

General Formula:



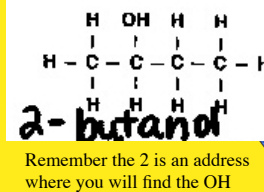
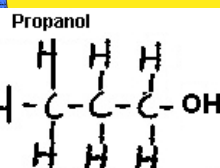
Draw the Alcohols: Straight chain hydrocarbons with an -OH

- Methanol
- Ethanol



Draw the Alcohols

- Draw Propanol
- Draw Butanol



Carboxylic Acids

Characterized by the
Carboxyl Group

$$\begin{array}{c} \text{O} \\ || \\ -\text{C}-\text{OH} \end{array}$$

Draw Carboxylic Acid: Straight chain hydrocarbons with a -COOH

- Draw
Methanoic Acid
- Draw
Ethanoic Acid

8. methanoic acid (formic acid)

$$\begin{array}{c} \text{O} \\ || \\ \text{H}-\text{C}-\text{OH} \end{array}$$

Ethanoic Acid

$$\begin{array}{c} \text{H} \quad \text{O} \\ | \quad || \\ \text{H}-\text{C}-\text{C}-\text{OH} \\ | \\ \text{H} \end{array}$$

Draw Carboxylic Acid

- Draw
Propanoic Acid
- Draw
Butanoic Acid

Propanoic Acid

$$\begin{array}{c} \text{H} \quad \text{H} \quad \text{O} \\ | \quad | \quad || \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{OH} \\ | \quad | \\ \text{H} \quad \text{H} \end{array}$$

Butanoic Acid

$$\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \quad \text{O} \\ | \quad | \quad | \quad || \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{OH} \\ | \quad | \quad | \\ \text{H} \quad \text{H} \quad \text{H} \end{array}$$

Amines have the $-\text{NH}_2$

Amines

Characterized by Nitrogen joined
to at least one alkyl group.

$$-\text{NH}_2$$

Amino Group

Amino Acids have $-\text{COOH}$ & $-\text{NH}_2$
remember the R means Repeating Hydrocarbon $-\text{CH}_2$

Amino Acid Structure

$$\begin{array}{c} \text{H} \quad \text{H} \quad \text{O} \\ | \quad | \quad || \\ \text{H}-\text{N}-\text{C}-\text{C}-\text{OH} \\ | \\ \text{R} \end{array}$$

Double & Triple Bonds

Double Bonds end in "ene" Triple Bonds end in "yne"

Ethene

$$\begin{array}{c} \text{H} \quad \text{H} \\ | \quad | \\ \text{H}-\text{C}=\text{C}-\text{H} \end{array}$$

Ethyne

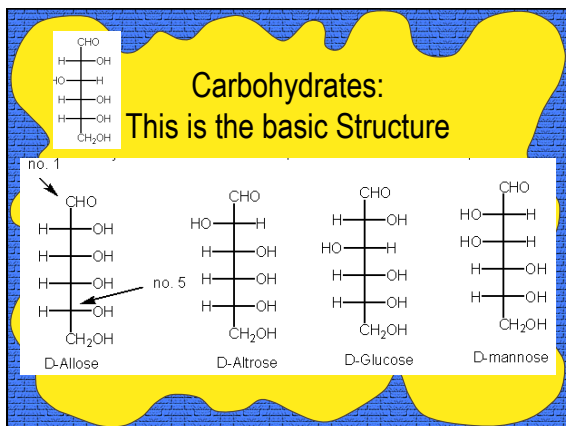
$$\text{H}-\text{C}\equiv\text{C}-\text{H}$$

2-butene

$$\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \\ | \quad | \quad | \quad | \\ \text{H}-\text{C}-\text{C}=\text{C}-\text{C}-\text{H} \\ | \quad | \\ \text{H} \quad \text{H} \end{array}$$

n-butyne

$$\begin{array}{c} \text{H} \quad \text{H} \\ | \quad | \\ \text{H}-\text{C}\equiv\text{C}-\text{C}-\text{C}-\text{H} \\ | \quad | \\ \text{H} \quad \text{H} \end{array}$$



7. It's a Family Thing

It's A Family Thing