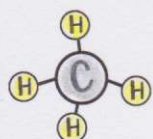


Name: \_\_\_\_\_

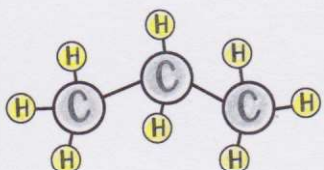
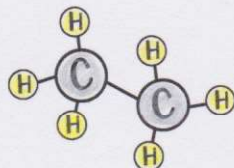
# Organic Molecules

## Examples of hydrocarbons



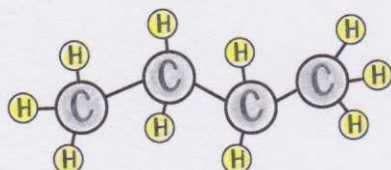
Methane

Ethane



Propane

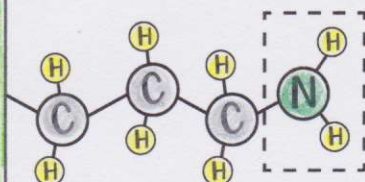
Butane



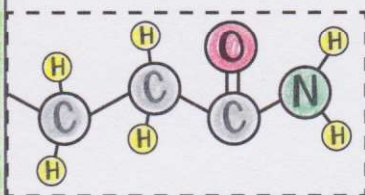
- organic molecules are made of carbon chains with hydrogens called hydrocarbons.
- These carbon-hydrogen chains, without any oxygen or nitrogen atoms, are nonpolar and do not dissolve well in water.
- Carbon-hydrogen chains can have other groups of atoms attached to them. These groups are called functional groups.
- With functional groups, these molecules can have different properties and totally different functions.
- If they have many oxygen and nitrogens attached, they usually dissolve better in water.

## Functional Groups

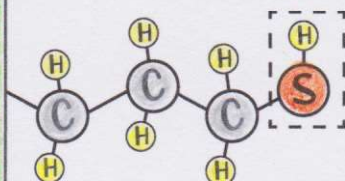
© BETHANY LAU



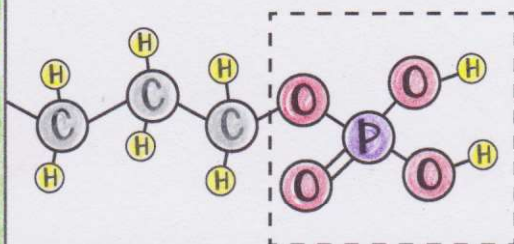
Amine Group



Amide

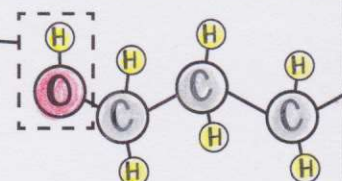


Sulfhydryl Group

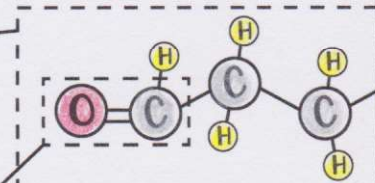


Phosphate Group

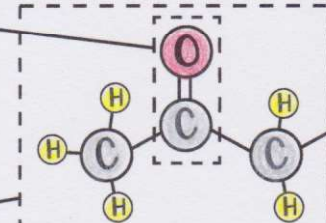
Hydroxyl Group



Aldehyde

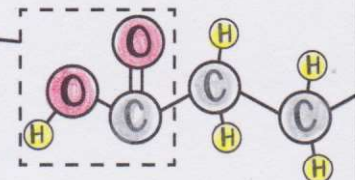


Carbonyl Group



Ketone

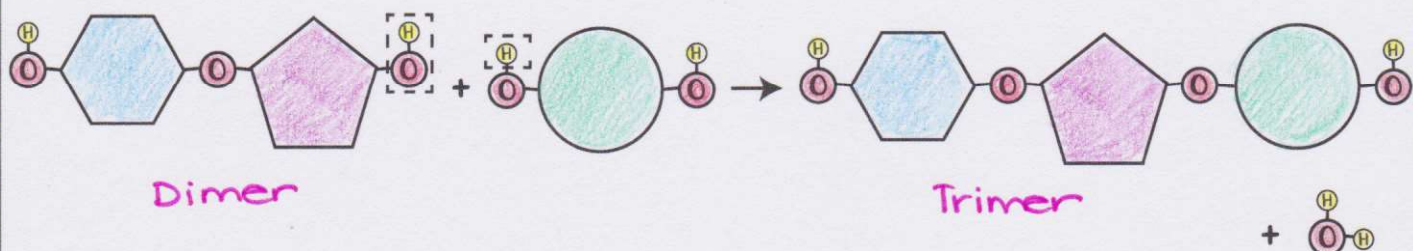
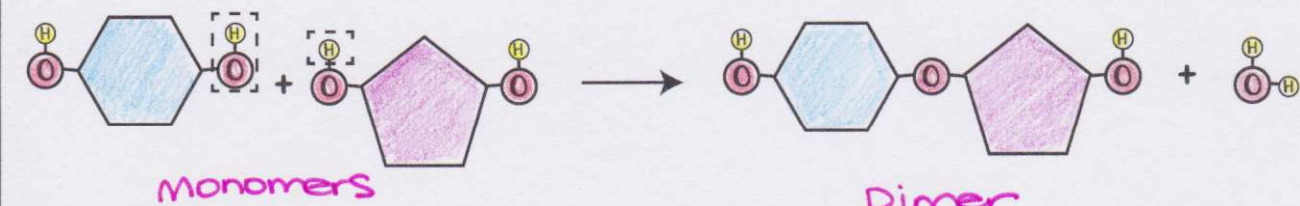
Carboxylic Acid Group





# Dehydration Synthesis

Name: \_\_\_\_\_

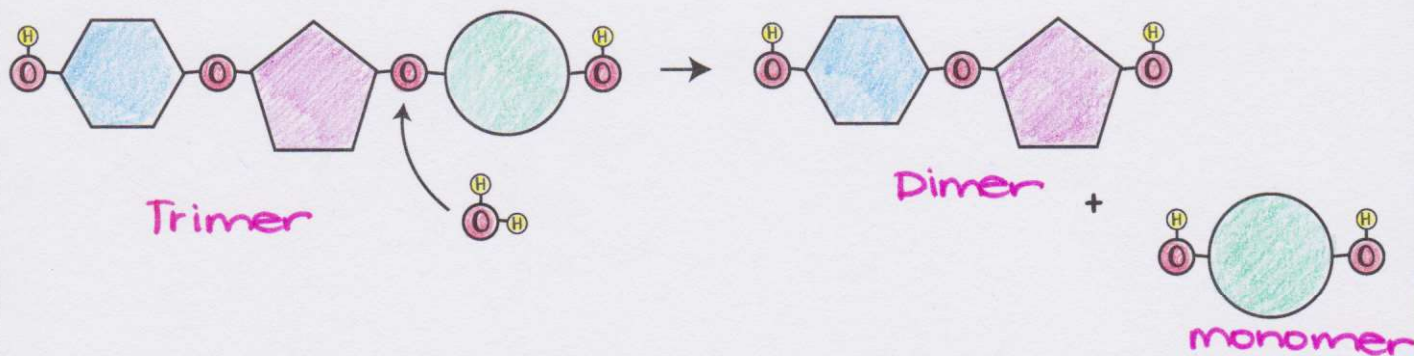


• This reaction is a very common reaction used to connect monomers (small hydrocarbon molecules) to build a dimer, trimer, or polymer (longer than 3 monomers).

• During the reaction, an  $-\text{OH}$  from one molecule and a  $-\text{H}$  from another molecule break off and form water.

• The bond formed in between the two molecules has an oxygen.

## Hydrolysis



• Hydrolysis is the reaction that occurs when one monomer is broken off a polymer chain.

• One water molecule is used up in this reaction. It breaks apart; an  $-\text{OH}$  goes to one monomer, and the other  $-\text{H}$  goes to the rest of the polymer chain left after the monomer breaks off.