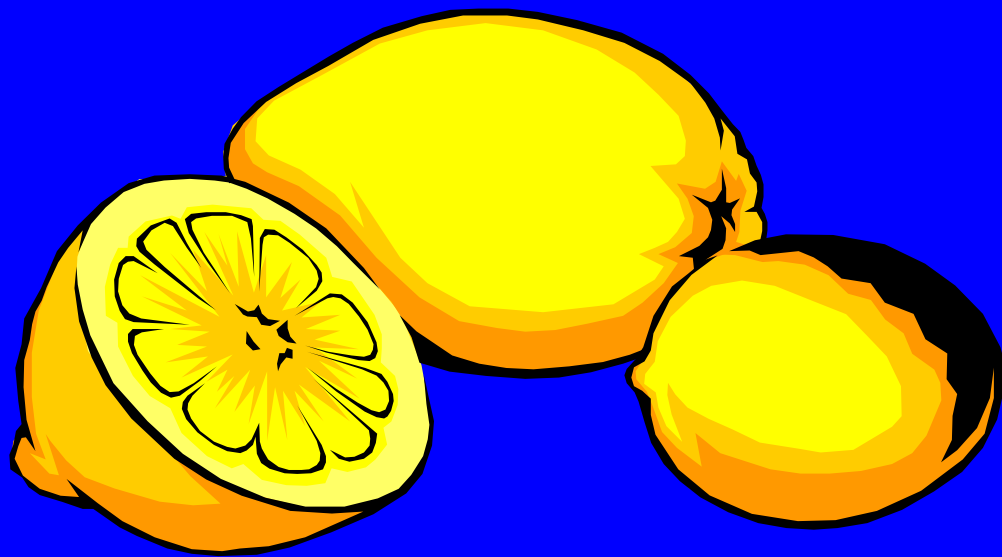
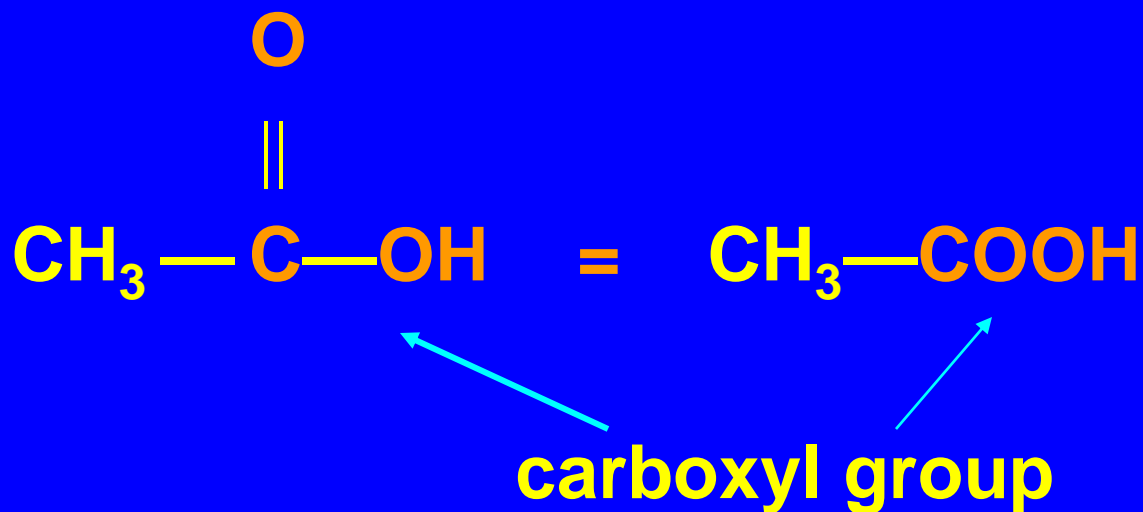


# Carboxylic Acids and Esters



# Carboxyl Group

Carboxylic acids contain the carboxyl group on carbon 1.

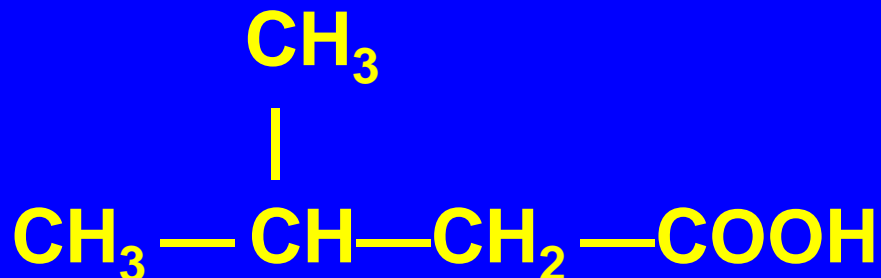


# Naming Carboxylic Acids

Formula	IUPAC	Common
	alkan -oic acid	prefix – ic acid
HCOOH	methanoic acid	formic acid
CH <sub>3</sub> COOH	ethanoic acid	acetic acid
CH <sub>3</sub> CH <sub>2</sub> COOH	propanoic acid	propionic acid
CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> COOH	butanoic acid	butyric acid

# Naming Rules

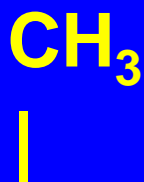
- Identify longest chain
- (IUPAC) Number carboxyl carbon as 1



IUPAC      3-methylbutanoic acid

# Learning Check

Give IUPAC names:



# Solution



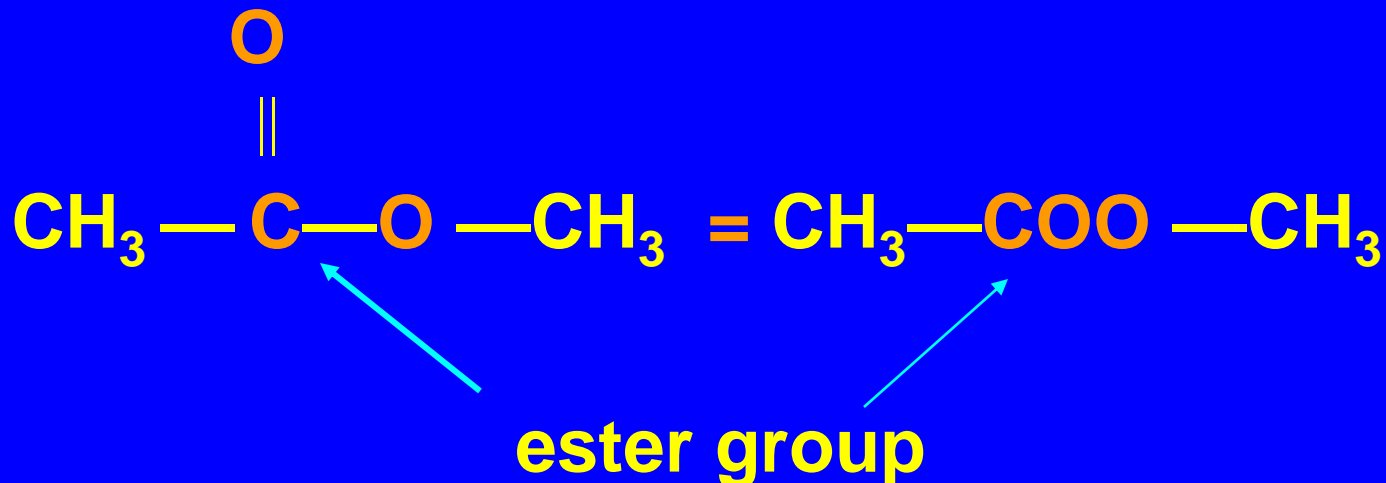
ethanoic acid (acetic acid)



2-methylpropanoic acid

# Esters

In an ester, the H in the carboxyl group is replaced with an alkyl group

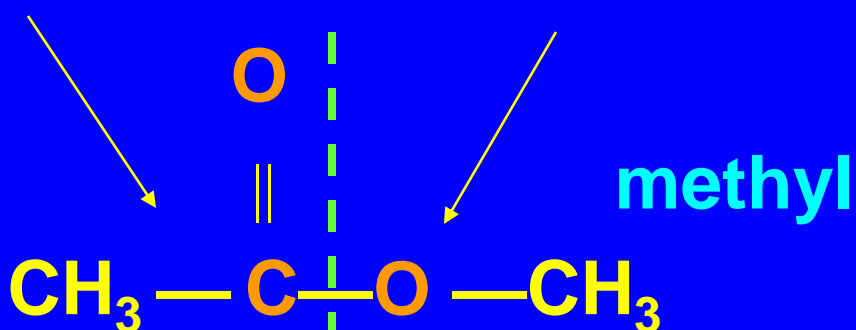


# Naming Esters

- Name the alkyl from the alcohol –O-
- Name the acid with the C=O with –oate

acid

alcohol



ethanoate  
(acetate)

methyl ethanoate (IUPAC)  
methyl acetate (common)



# Some Esters and Their Names

Flavor/Odor

Raspberries



ethyl methanoate (IUPAC)

ethyl formate (common)

Pineapples

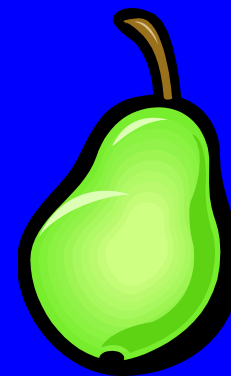
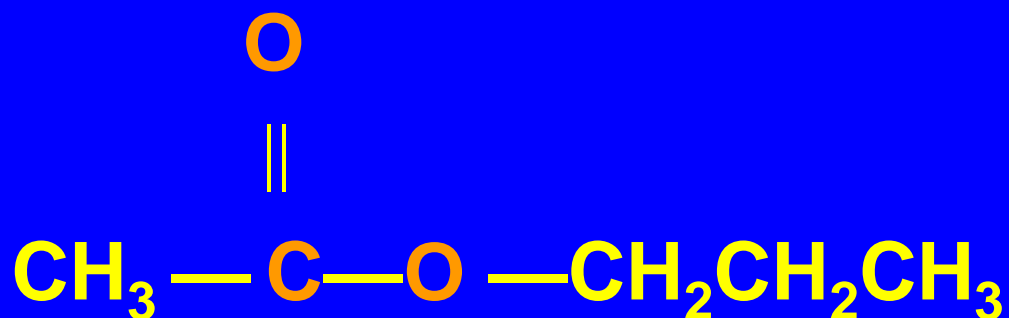


ethyl butanoate (IUPAC)

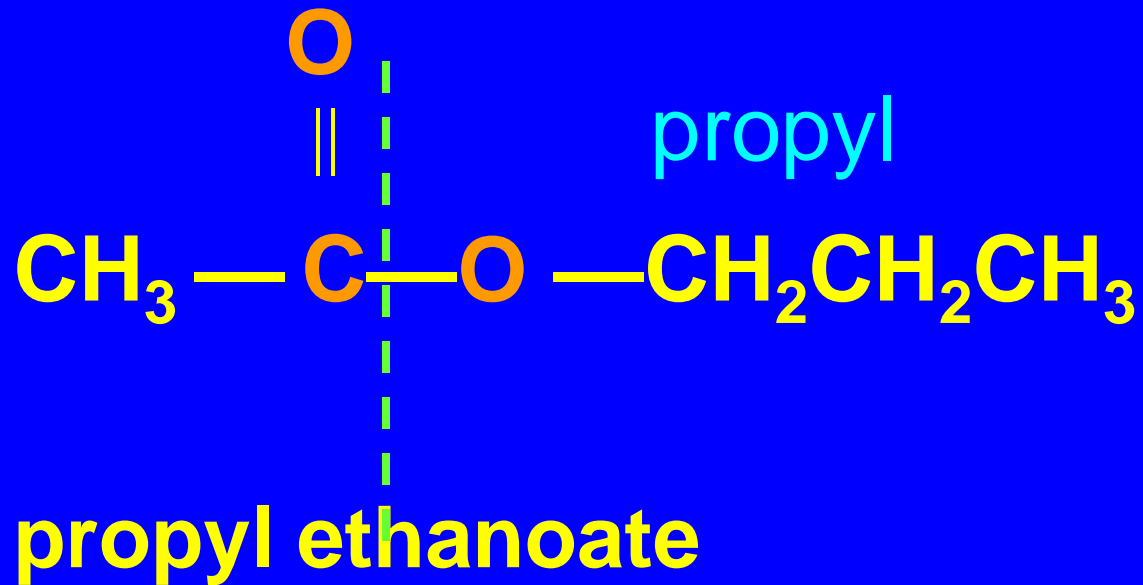
ethyl butyrate (common)

# Learning Check

Give the IUPAC names of the following compound, which is responsible for the flavor and odour of pears.



# Solution



# Learning Check

Draw the structure of the following compounds:

A. 3-bromobutanoic acid

B. Ethyl propanoate

# Solution

A. 3-bromobutanoic acid



B. Ethyl propanoate

