

Higher: Oxidation of Food

Oxidation of alcohols

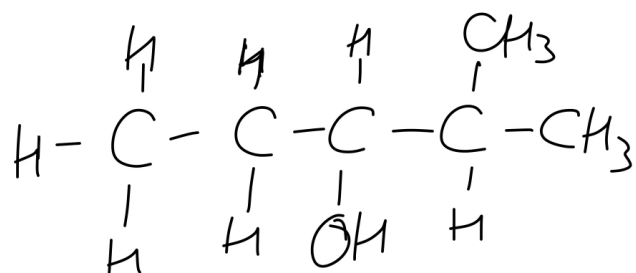
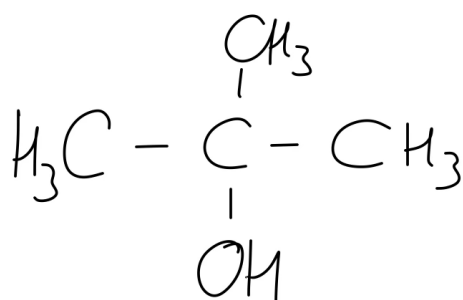
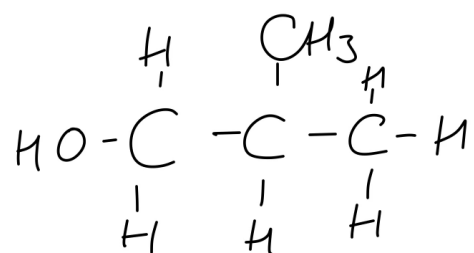
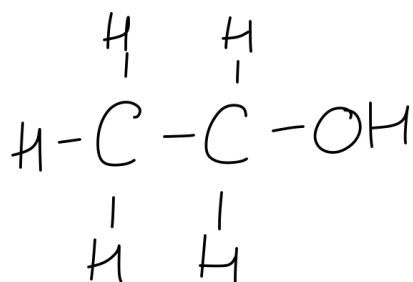
Primary

Secondary

Tertiary

?

Classify each alcohol as primary/secondary/tertiary



Oxidation of carbon compounds involves ...

Reduction of carbon compounds involves...

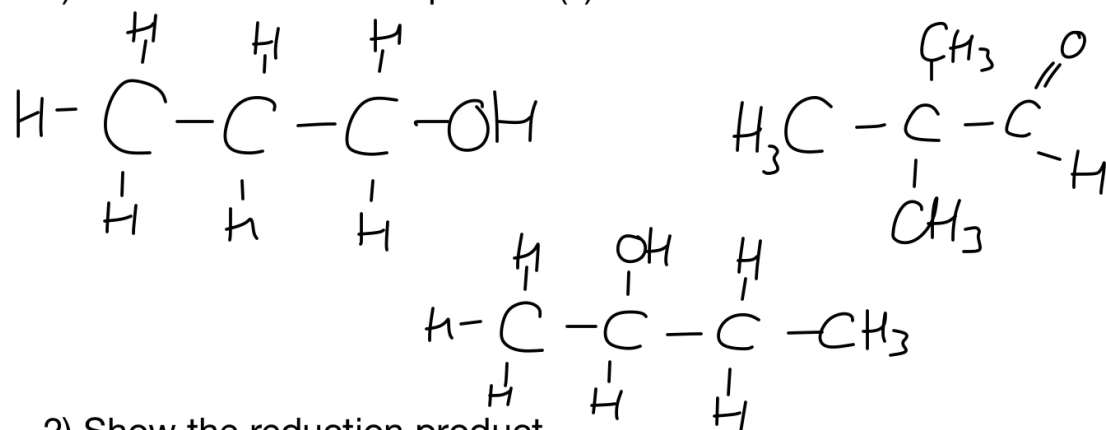
Primary alcohols can be oxidised to _____ and then _____, and secondary alcohols oxidised to _____ using _____ (_____ to _____) and _____ (_____ to _____). Tertiary alcohols _____ be oxidised.

Primary alcohol

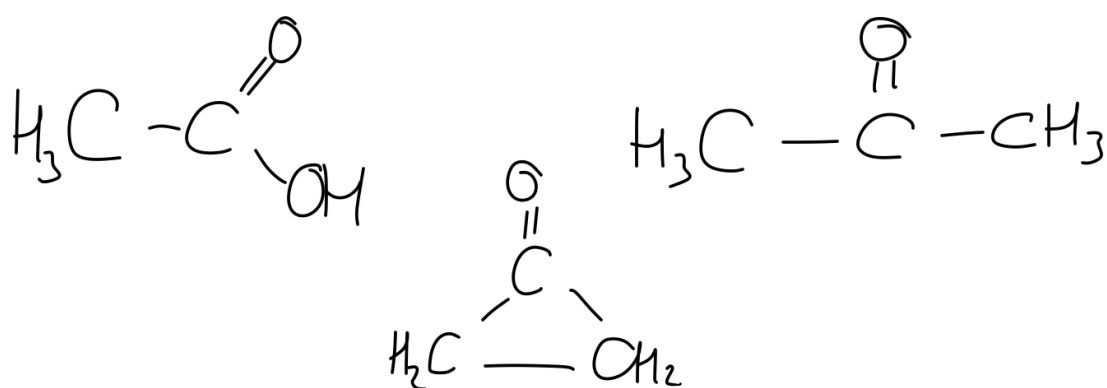
Secondary alcohol

Tertiary alcohol

1) Show the oxidation product(s)



2) Show the reduction product



Carbonyl compounds

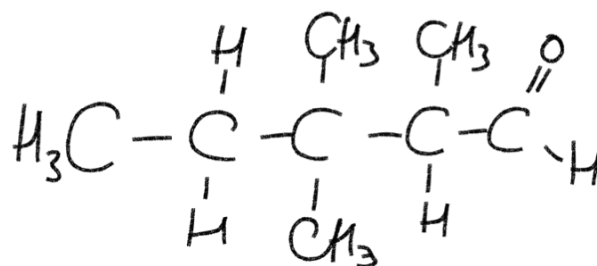
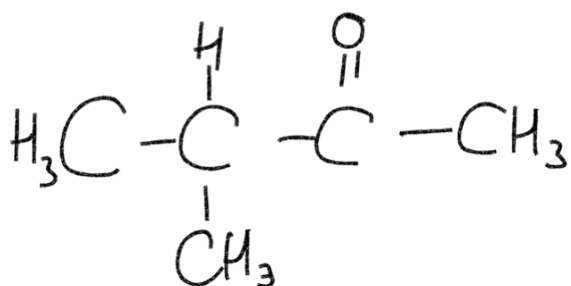
Aldehydes and ketones contain the _____ functional group

Aldehyde structure

Ketone structure

Naming carbonyl compounds

1. Count the longest chain containing the carbonyl group
2. Number from the end nearest the carbonyl
3. If $C=O = 1$, name ends in -al, if $C=O > 1$, name ends in -one and number inserted into name
4. Name branches



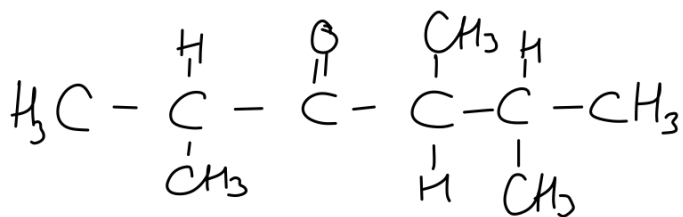
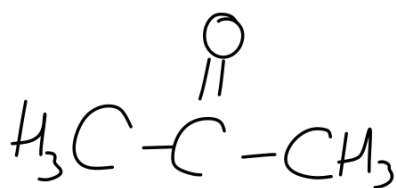
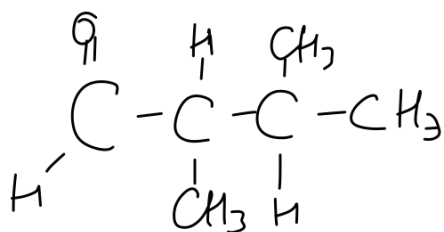
Drawing carbonyl compounds

2,2,4-trimethylhexanal

3-methylpentan-2-one

?

1) Name the compounds



2) Draw:

2-methylpropanal

butanone

2,2-dimethylhexan-3-one

methanal

Aldehydes can be oxidised to _____. Ketones cannot. Aldehydes and ketones can be distinguished using oxidising agents.

Oxidising Agent	Starting colour	End colour

Aldehydes and ketones are _____ compounds and are commonly used as _____ and _____ compounds.

Carbon compounds in food can be _____ by the
_____ in the air. This can cause oils to become _____

To prevent this _____ are added to foods.

Antioxidants are _____ and will oxidise in
place of the compounds they are added to protect.