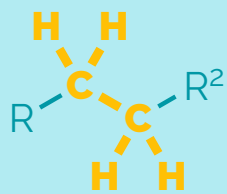


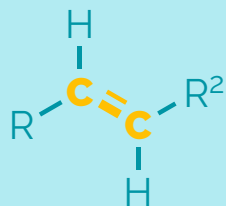
Common Functional Groups (& key UG reactions)

Alkane



radical
halogenation

Alkene



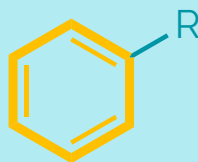
addition
reactions

Alkyne



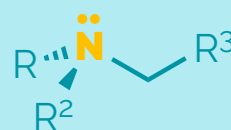
addition
reactions

Arene



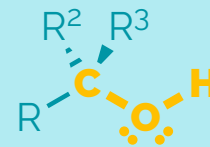
electrophilic
aromatic
substitution

Amine



base & nucleophilic
(substitution/
addition to C=O)

Alcohol



nucleophile &
leaving group in
strong acid

Alkyl halide



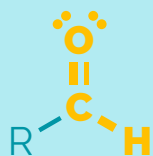
leaving group in
substitution &
eliminations

Thiol



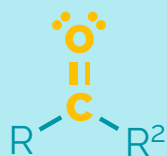
nucleophile &
radical reactions

Aldehyde



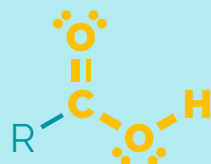
nucleophilic
addition

Ketone



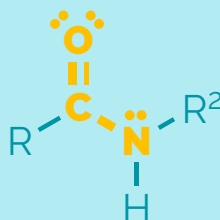
nucleophilic
addition

Carboxylic acid



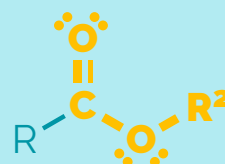
acid & acyl
substitution

Amide



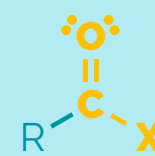
acyl substitution

Ester



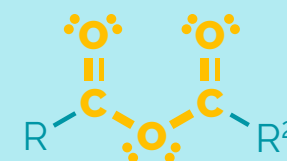
acyl substitution

Acyl halide



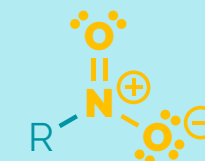
acyl substitution

Anhydride



acyl substitution

Nitro



reduction &
deprotonation

Ether



nothing interesting

Sulfide



oxidation

Disulfide



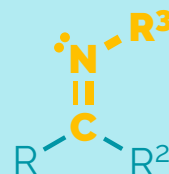
oxidation &
reduction

Acetal



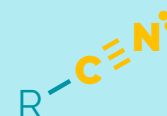
hydrolysis

Imine



nucleophilic
addition &
hydrolysis

Nitrile



reduction &
hydrolysis

Conclusion

- These are the common functional groups (the first group are the most important).
- There are many more but these should get you through.
- Functional groups allow us to predict the properties of a molecule but are no substitute for understanding electron distribution & how it influences reactivity.