

## Functional Groups

A functional group is a group of atoms within a molecule that has a characteristic chemical behaviour.

Functional groups help to explain:

- Why certain groups dissolve in water and others don't
- Why some have high or low melting points

### Carbon-Carbon Double or Triple Bonds ( $C=C$ or $C\equiv C$ )

- double or triple bond is strong and hard to break
- known as 'unsaturated' carbons
- alkanes are generally unreactive (because saturated) but alkenes/alkynes undergo addition reactions (because unsaturated).

### Carbon Bonded to Nitrogen or Oxygen in Single Bond

- Carbon bonding to an electronegative (ability of element to pull a pair of electrons in a covalent bond) element. ( $\therefore$  electrons are pulled to Oxygen, Nitrogen, or Halogen atoms, away from Carbon)
- Because of polar bonds, these compounds have high boiling & melting points.

### Carbon Bonded to Oxygen with a Double Bond

- Oxygen is more electronegative and draws electrons (all 4) to Oxygen, away from Carbon, having high boiling and melting points (highest of all three groups)

### Names and Structural Examples

