Organic compounds and reactions

Alcohols

Key term	Definition
Alcohol	an organic compound that contains an -OH functional group, such as methanol and ethanol
Anaerobic	takes place when oxygen is not present
Enzyme	a naturally occurring catalyst made from protein that is produced by living cells to carry out the chemical reactions essential for life
Fermentation	when glucose is converted to ethanol by microorganisms such as yeast

Alkenes

Key term	Definition
Addition reaction	when two molecules combine to form a single product
Alkene	a hydrocarbon with a C=C double bond which has the general formula C_nH_{2n}, such as ethene and propene
Unsaturated hydrocarbon	a hydrocarbon with a double or triple bond between one or more of the carbon atoms, such as an alkene

Carboxylic acids

Key term	Definition
Carboxylic acid	an organic compound that contains a -COOH functional group, such as methanoic acid and ethanoic acid
Condensation	a chemical reaction between two functional groups that joins molecules together, while also producing a small molecule such as water
Ester	an organic compound that contains a -COO- functional group (formed by reaction of a carboxylic acid with an alcohol) such as ethyl ethanoate

Condensation polymerisation and amino acids

Key term	Definition
Amine	an organic compound that contains an -NH_2 functional group, such as ethylamine
Amino acid	a molecule with both amine and carboxylic acid functional groups that is the monomer for polypeptides; there are 20 different naturally occurring amino acids

Biodegradable	able to be broken down by living organisms in the natural environment
Carbohydrate	a natural organic compound such as glucose or starch, with molecules containing carbon and also hydrogen and oxygen in a 2:1 ratio
Condensation polymerisation	when many monomers, each with two functional groups, join together by a condensation reaction to form a polymer
Double helix	a structure which consists of two strands that twist around each other, such as the polynucleotides in DNA
Monomer	a small molecule that can react with many other small molecules to form a polymer
Monosaccharide	a carbohydrate molecule such as glucose, that is the monomer for polysaccharides
Nucleotide	the monomer for polynucleotides, such as the four types found in DNA; abbreviated A, T, G and C
Polyamide	a condensation polymer such as nylon, formed by combining monomers containing amine and carboxylic acid functional groups
Polyester	a condensation polymer such as terylene®, formed by combining monomers containing alcohol and carboxylic acid functional groups
Polymer	a very large molecule made by joining together lots of small molecules
Polynucleotide	a natural condensation polymer formed from nucleotides
Polypeptide	a condensation polymer formed from amino acids
Polysaccharide	a natural condensation polymer such as starch or cellulose, formed from monosaccharides
Protein	a large natural molecule made up of one or more polypeptide chains that has an important role in living cells

Representing organic compounds

Key term	Definition
Displayed formula	a type of structural formula that shows all the bonds between the atoms in the molecule, such as shown here for methane 
Empirical formula	gives the simplest whole number ratio of atoms of each element in a substance, such as CH_2 for ethene which has molecular formula C_2H_4
Functional group	a group of atoms that are responsible for the chemical properties of a compound, such as the -OH group in an alcohol
General formula	a formula that represents every member of a particular homologous series, such as C_nH_{2n+2} for alkanes
Homologous series	a series of organic compounds with the same general formula, which react in a similar way, such as alkanes
Isomers	compounds which have the same molecular formula but their atoms bonded in a different arrangement
Molecular formula	uses chemical symbols to give the number of atoms of each element in one molecule of the substance, such as N_2 for nitrogen and H_2O for water
Organic compound	a compound that contains carbon atoms (excluding the oxides of carbon or carbonates)

Structural formula	shows the number and arrangement of the atoms of each element in one molecule, such as $CH_3CH_2CH_3$ for propane