
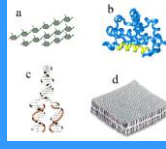


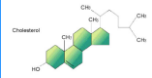
D-Glucose



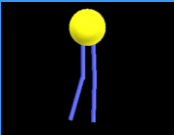
Macromolecules



1.3 Introduction to Biological Macromolecules

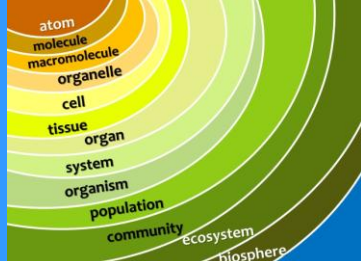


Cholesterol



ENDURING UNDERSTANDING

SYI-1 Living systems are organized in a hierarchy of structural levels that interact.




atom
molecule
macromolecule
organelle
cell
tissue
organ
system
organism
population
community
ecosystem
biosphere

SYI-1.B Describe the properties of the monomers and the type of bonds that connect the monomers in biological macromolecules

☐ Hydrolysis and dehydration synthesis are used to cleave and form covalent bonds between monomers


Structure of Monomers and Polymers

MONOMER



A monomer is a small molecule.

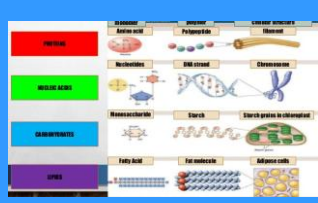
POLYMER



A polymer is a long-chain molecule made up of a repeated pattern of monomers.

SYI-1.B Describe the properties of the monomers and the type of bonds that connect the monomers in biological macromolecules

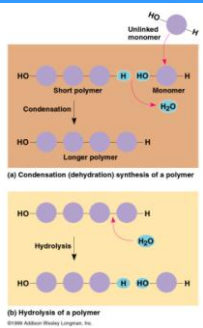
- Monomers
 - Similar repeating units that make up polymers
 - Amino Acids
 - Nucleotides
 - Monosaccharides
 - Fatty Acids
- Polymers
 - Compounds made of repeating linked units
 - Link by covalent bonds
 - Lipids
 - Carbohydrates
 - Protein
 - Nucleic Acids



SYI-1.B Describe the properties of the monomers and the type of bonds that connect the monomers in biological macromolecules

☐ Hydrolysis and dehydration synthesis are used to cleave and form covalent bonds between monomers.

- Dehydration Synthesis
 - Also called a Condensation Reaction
 - Builds Polymers
 - Form a water molecule
- Hydrolysis
 - Cleaves polymers
 - Breaks bonds between monomers by adding water (digestion)



(a) Condensation (dehydration) synthesis of a polymer

(b) Hydrolysis of a polymer