BIOLOGICAL MOLECULES

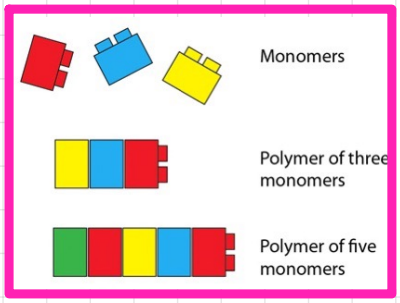
Ch. 3

CONTEXTUALIZE

Have you ever made a friendship bracelet? Each individual bead is strung together to make a full bracelet. This concept of smaller items being joint together to create a larger and more complex item is the heart of today's lesson.

What are macromolecules?

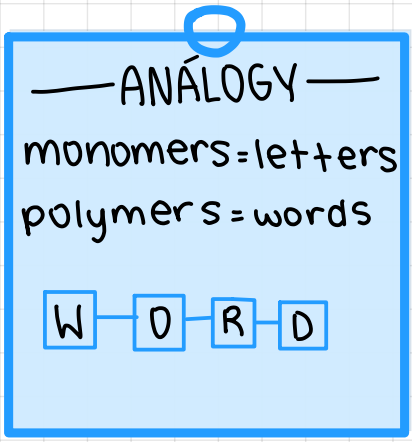
- Marco = large
- large molecules formed by combining smaller molecules
  - carbohydrates , proteins, nucleic acids



What are polymers and monomers?

- poly (greek) = many
- mers (greek) = parts
- polymers = many parts
- mono = single
- monomers = singe part

- polymer : a long chain of many repeating molecules
- monomer : repeating molecules that make up polymers

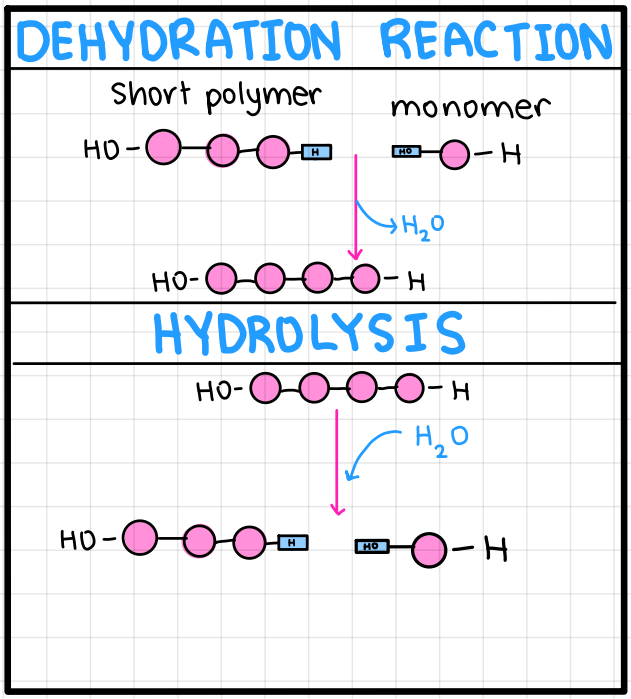


What are enzymes?

- special macromolecules that speed up chemical reactions

How does dehydration reaction work?

- monomers are bonded by this process
- covalently bonded with loss of water molecule
- dehydration = loss of water



What is hydrolysis?

- polymers are broken down into monomers through hydrolysis
-reverse of dehydration reaction
- hydro (Greek) = water
- lysis (Greek) = break
- bond is broken with an ADDITION of a water molecule

CARBOHYDRATES

- sugars
  - single
  - monosaccharides
    - sugar
    - glucose
  - diasaccharide
    - 2 monosaccharides by glycosidic linkage
- polymers of sugars
  - polysaccharides
    - many
    - polymer with many monosaccharide
      - structure
        - cellulose
          - tough cell wall
        - chitin
          - anthropod exoskeletons
      - storage
        - starch (plants) polymer of glucose mono-mers
        - glycogen (animals)

glycosidic linkage

- covalent bond b/w 2 monosacchs by DR