

Topic

Building and Breaking down Biomacromolecules

Obj: Explain the role water
plays in dehydration synthesis
and hydrolysis



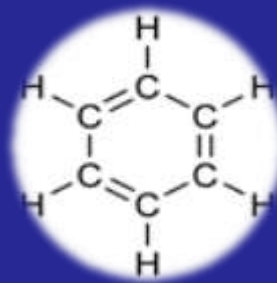
Carbon – Organic Chemistry



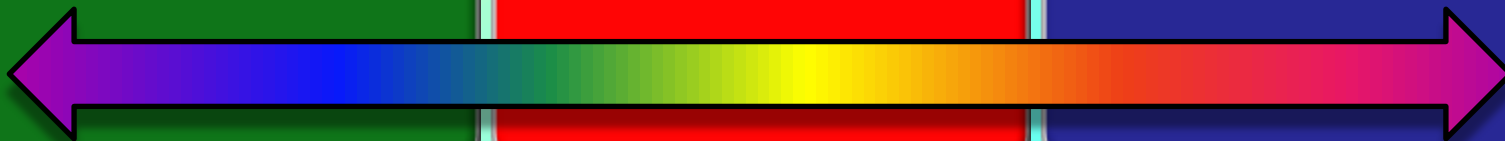
Forms 4 covalent
bonds



Energy is stored
in covalent bonds



Carbon can form
large stable
chains or rings or
chains of rings



Polymerization

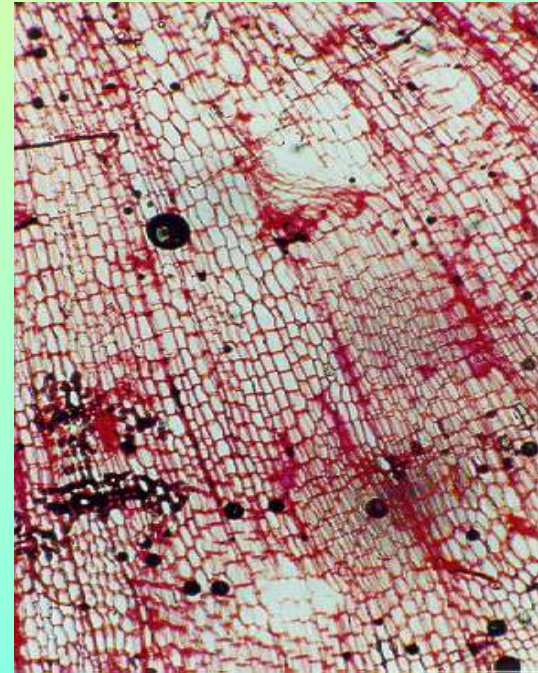
Many small molecules,
monomers, are joined
together to form very large
molecules called polymers

Really, really,
really large
molecules are
called
macromolecules

Define
Biomacromolecules

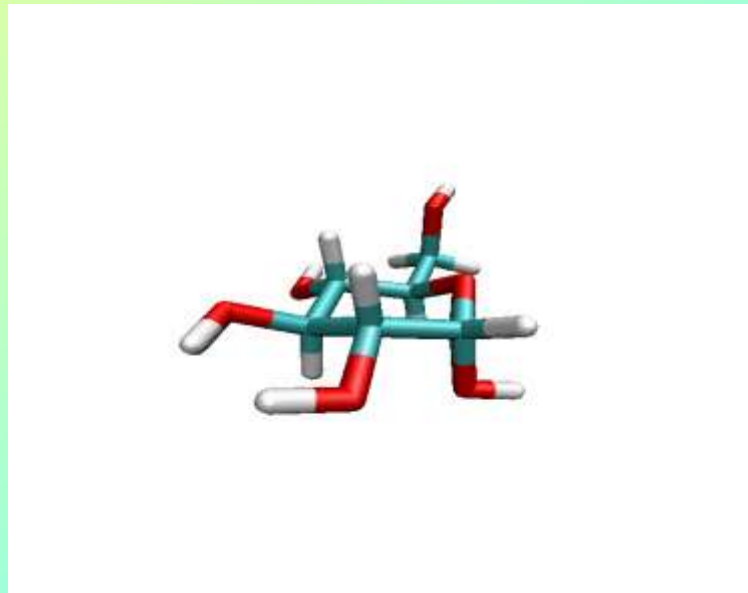
Carbohydrates

- Examples
- Functions
 - Energy
 - structure

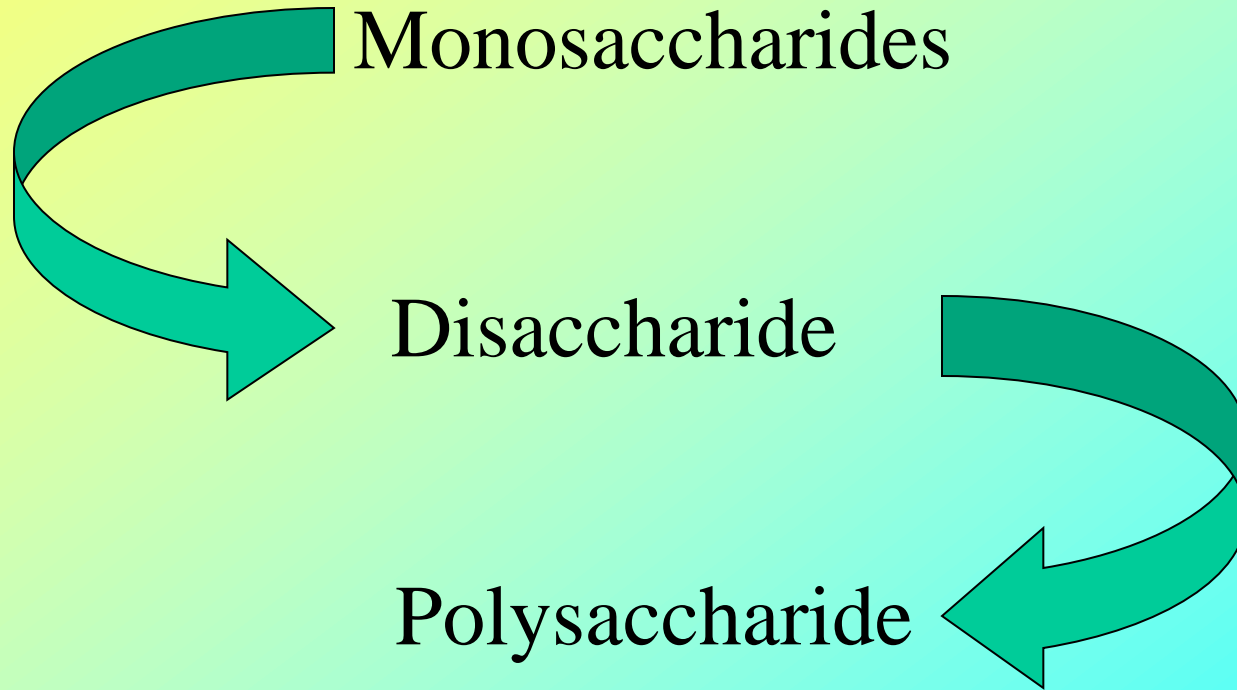


Carbohydrates

- Monomers – monosaccharides
- Ex. Glucose



Dehydration Synthesis



Dehydration / Hydrolysis

Dehydration synthesis

Glucose



Fructose

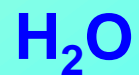


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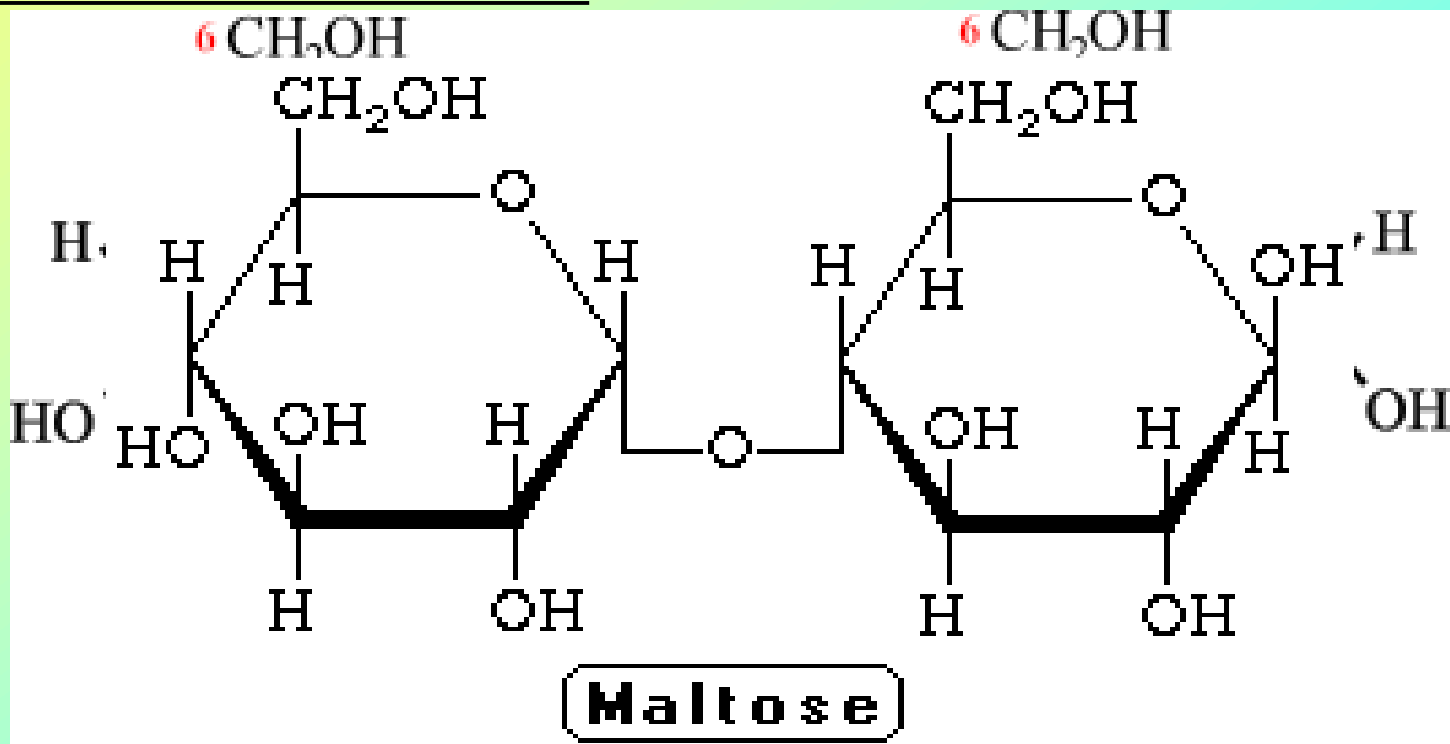
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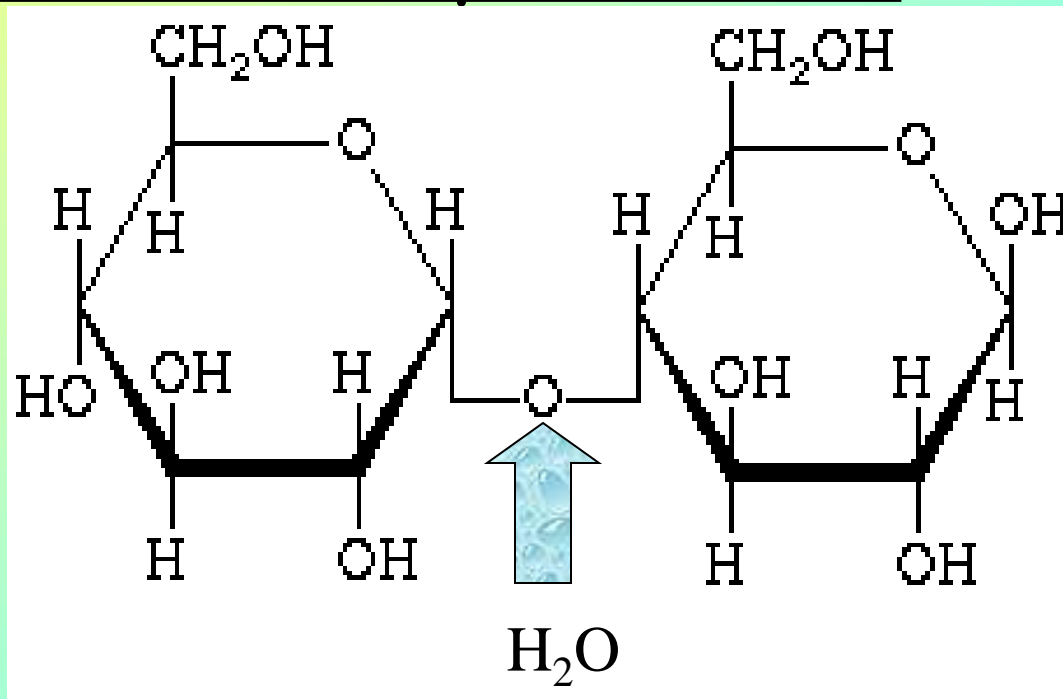
Dehydration synthesis

- Small molecules are joined together to form larger molecules
- Energy is used
- Water is released



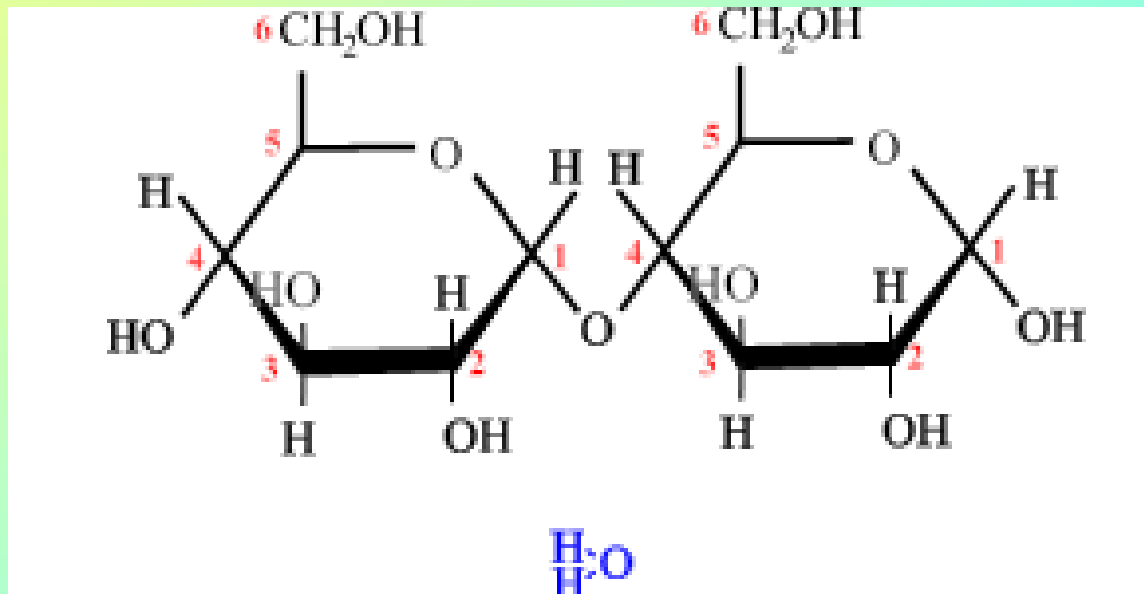
Hydrolysis

- Large molecules are broken apart to produce smaller molecules
- Energy is released
- Water is used to split the bond



Hydrolysis

- Large molecules are broken apart to produce smaller molecules
- Energy is released
- Water is used to split the bond



Review/Reflection

- In your notebooks, please write down and answer the following questions:
 - What is the building block of carbohydrates? Where does this name come from (i.e. what do the word parts mean)?
 - What is dehydration synthesis? Hydrolysis? What role does water play?
 - What did you learn from the building carbohydrates activity?