

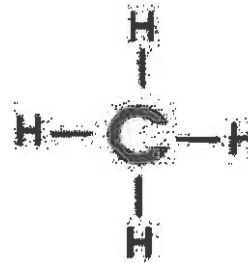
SEAQUAM SCIENCE: BIOLOGY 12
ORGANIC BIOLOGICAL MOLECULES

Name: _____

Date: _____
 Block: _____

- always contains carbon and hydrogen

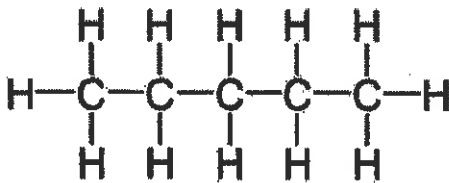
E.g. Methane (gas)



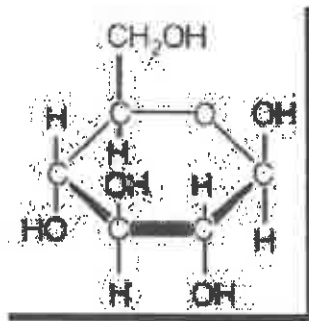
Or could include a hydrocarbon chain

Or a ring compound

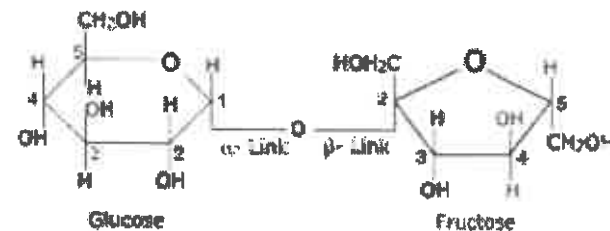
E.g. Pentane



E.g. glucose



E.g. SUCROSE



There are 4 Categories –
 (Carbohydrates, Lipids, Proteins and Nucleic Acids)

Carbohydrates

- quick and short term term energy storage
- glucose takes part in cellular respiration
- glucose is stored as glycogen in the liver

Polysaccharides

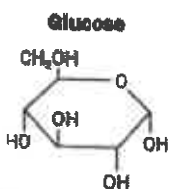
	Cellulose	Starch		Glycogen
		Amylose	Amylopectin	
Source	Plant	Plant	Plant	Animal
Subunit	β -glucose	α -glucose	α -glucose	α -glucose
Bonds	1-4	1-4	1-4 and 1-6	1-4 and 1-6
Branches	No	No	Yes (~per 20 subunits)	Yes (~per 10 subunits)
Diagram				
Shape				

↑
 Straight chains
 - no branches

↑
 Some branches

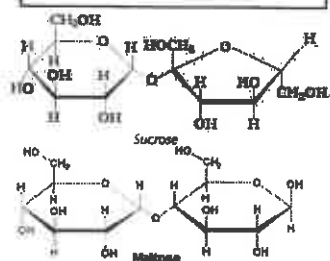
↑
 more branches

Monosaccharides



one singular ring compound

Disaccharides

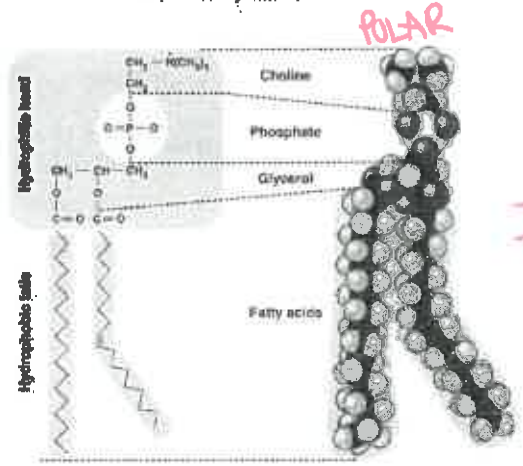
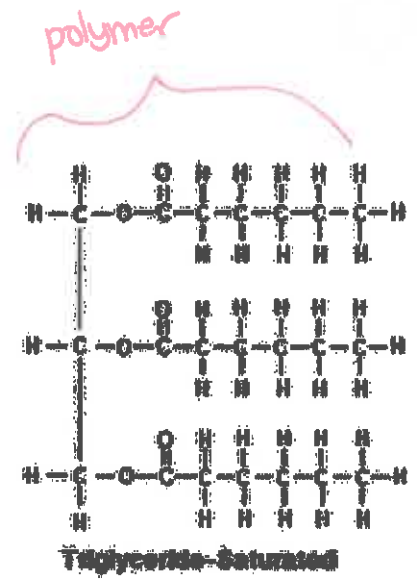
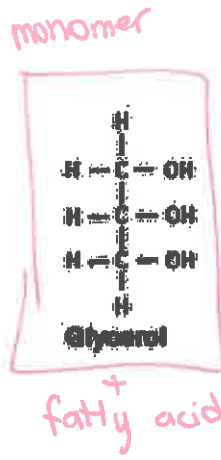
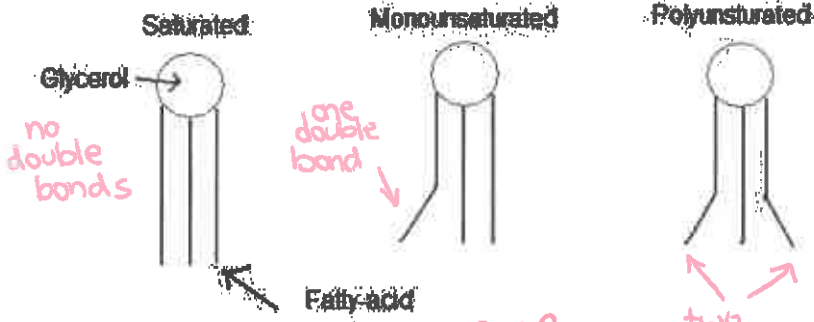


two ring compound attached

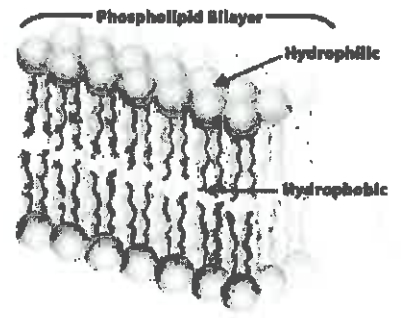
Lipids

- long term energy storage
- Insulates against heat and loss of heat
- Protective cushion
- Forms cell membranes

Triglycerides



- Cell membranes
- one double bond in the fatty acid chains



- Steroids - testosterone
- cortisone
 - vitamin D
 - cholesterol

[contains attached rings]

Proteins

- Hemoglobin that transports oxygen
- Keratin in hair and nails
- Collagen in ligaments, cartilage, bones and tendons
- Part of muscles
- Part of enzymes that speed up metabolic reactions

Nucleic Acids

- Part of DNA - the genetic code deoxyribonucleic acid
- Part of RNA - which aids in protein synthesis ribonucleic