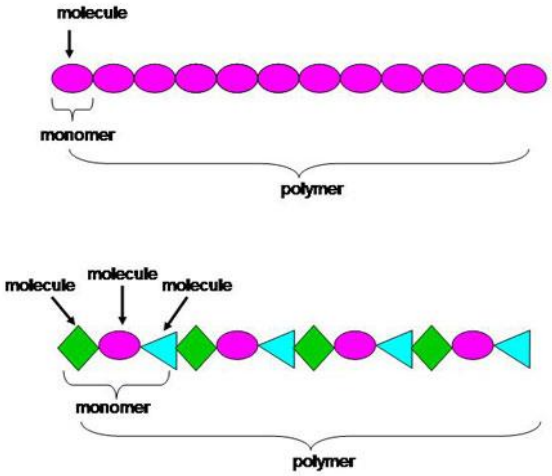
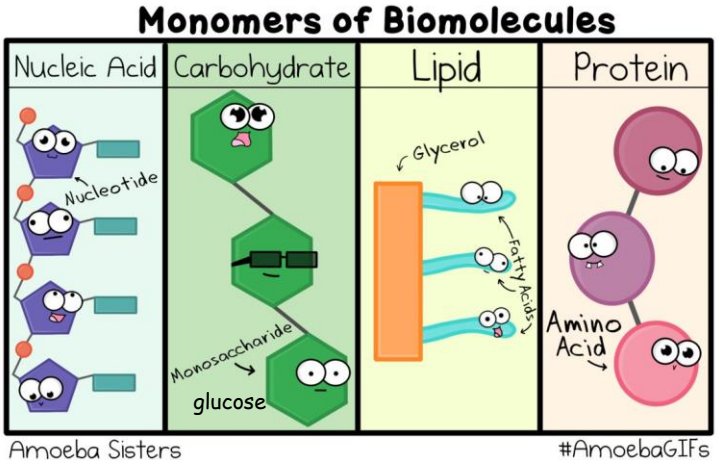
NAME _____ DATE_____ PERIOD_____

Monomers and Polymers Worksheet – Option 1

PART 1 – ***All macromolecules are polymers made up of monomers. Monomers are repetitive units that form a larger compound. Look at the image below to familiarize yourself with monomer and polymer structure.***





Example: If words are the polymer, letters are the monomer. If a sentence is the polymer, words are the monomer.

PART 2 - Macromolecules are large molecules (polymers) made up of smaller subunits called monomers and when monomers link together they form polymers.

1. Match the MONOmer on the left to the macromolecules on the right.

Fatty acids and glycerol	_____	A. Protein
Monosaccharide	_____	B. Lipid
Nucleotide	_____	C. Nucleic acid
Amino acid	_____	D. Carbohydrate

2. Match the POLYmer on the left to the macromolecules on the right.

DNA	_____	A. Protein
Enzyme	_____	B. Lipid
Triglyceride	_____	C. Nucleic acid
Polysaccharide	_____	D. Carbohydrate

3. Match the MONOmer on the left to the POLYmer on the right.

Fatty acids and glycerol	_____	A. Enzyme
Glucose	_____	B. Triglyceride
Nucleotide	_____	C. Starch
Amino acid	_____	D. DNA

4. Explain how monomers are related to polymers.

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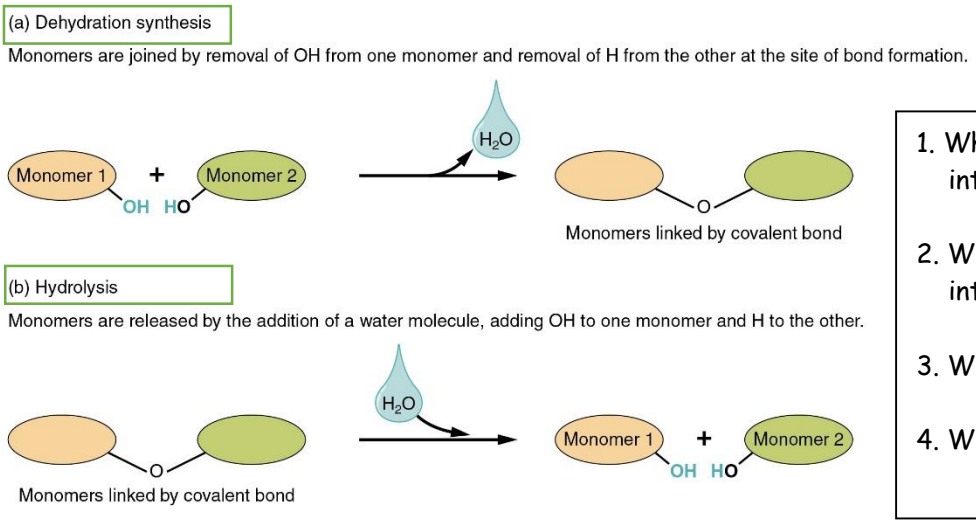
PART 3 - Complete the chart below. Remember *mono* means one and *poly* means many.

MACROMOLECULES	FOOD EX.	MONOMER	POLYMER
Carbohydrates			
Lipids			
Proteins			
Nucleic Acids			

Your best friend tells you that they are deathly allergic to certain amino acids in food. Your mom has prepared dinner already, so you need to tell her not to serve what macromolecule to them?

_____

PART 4 - Study the image below then answer the questions on the right.



1. Which process breaks polymers into monomers?
2. Which process bonds monomers into polymers?
3. Which reaction stores energy?
4. Which reaction releases energy?

For each example circle whether it is describing dehydration synthesis or digestion and if energy is needed or released.

a. Glucose + fructose --> sucrose

Synthesis OR Digestion

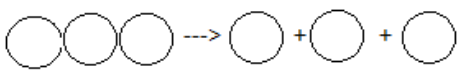
Energy needed OR Energy released

b. Amino acid--amino acid --> amino acid + amino acid

Synthesis OR Digestion

Energy needed OR Energy released

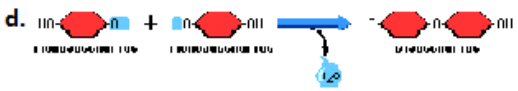
c.



Synthesis OR Digestion

Energy needed OR Energy Released

d.



Synthesis OR Digestion

Energy needed OR Energy Released