

2.3 Carbon Compounds Con't

Welcome! 10/23/14

- OBJECTIVE: Students will continue to investigate major categories of carbon compounds using the text and create a macromolecule foldable, complete assessment questions, and whiteboard review.
- CATALYST:
 - REVIEW: what is “organic”?
 - PREDICT: What does “Macro” mean?
 - What are 2 differences between vitamins and minerals?
- HOMEWORK/REMINDERS:
End of quarter work DUE Tuesday, October 28th

Grade Check-In

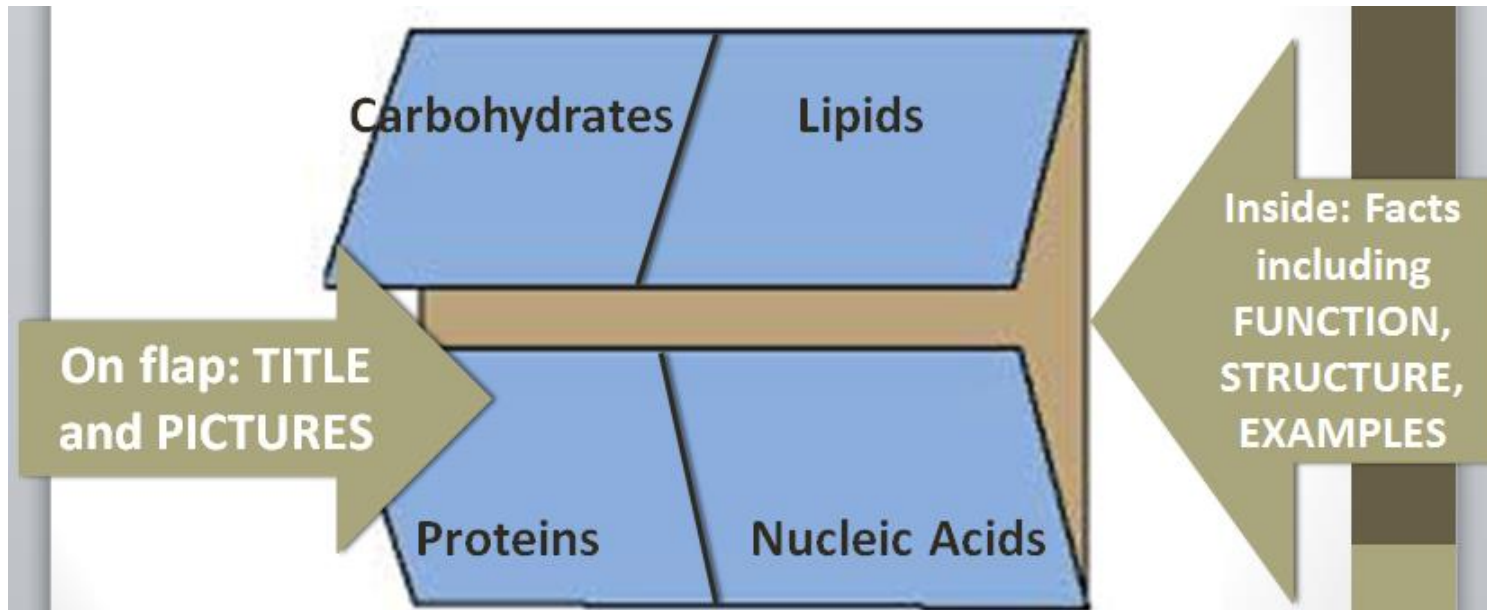
- 1st Quarter ENDS 10/29.
- ALL Missing assignments from the end of Unit 1 and Unit 2 are DUE NO LATER THAN Tuesday, October 28th
- Coach Class is Available Tuesday and Thursday afterschool

2.3 Carbon Compounds

- Use pages 45-49 in the red Biology textbook to research carbon compounds
- Take notes on “The Chemistry of Carbon” and “Macromolecules” sections on Page 69 of your notebook.
- Then take notes on the 4 macromolecules in the provided foldable on Page 71

Your Independent Work Agenda

- Finish Macrmolecule Foldable (Page 71) using Pages 46-49 of your textbook



- Answer the 2.3 Assessment Questions from Page 49 in the textbook on Page 70 of your notebook.

Review Roots

- Mono: _____
- Poly: _____
- Macro: _____

Monomer & Polymer Notes

- There are four types of big molecules you will learn about in biology this year. Each of these macromolecules has a very important job in our bodies.
- For example, lipids and carbohydrates both provide energy for all of our daily activities. The job a molecule performs in our bodies is called its function, and today, you will learn what the structure of a molecule is.

THINK!

When you are building a house, what do you need to add together to create the house? (Masonry students should know!)



Monomers & Polymers Notes

- In this example, the bricks are the monomers (the building blocks) for the house.
- The house is the polymer because it is made up of many individual bricks.
- Similarly, all macromolecules are made from smaller molecules linked together in a chain.



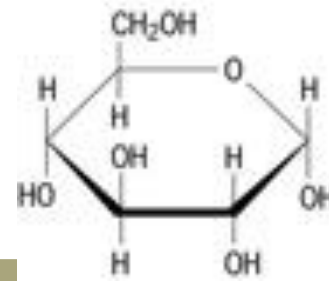
Practice

- *For each of the following sentences, underline the monomer and circle the polymer. We'll do one together as a class.*
- 1. My living room has 6 pieces of furniture.
- 2. Ms. Farley's Biology class consists of about 25 students.
- 3. Many playing cards can be used to make a card house.
- 4. Carver's basketball team has two point guards, four shooting guards, two centers, and two forwards.
- 5. An office building is made out of steel beams and support rods.
- 6. Many children like to use Legos to build space ships.

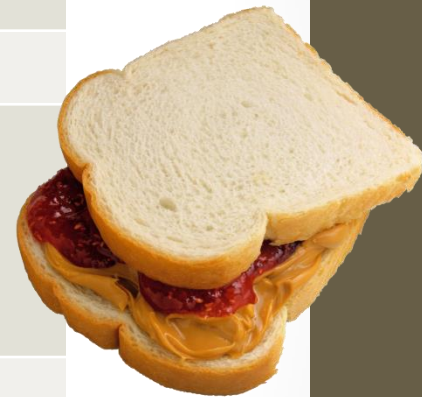
Now onto Macromolecules!

- “Macromolecules” = “BIG” molecules
- 4 main macromolecules:
 - Carbohydrates
 - Lipids
 - Proteins
 - Nucleic Acids

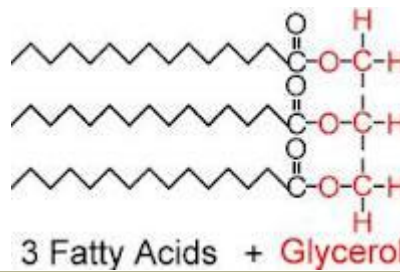
Carbohydrates



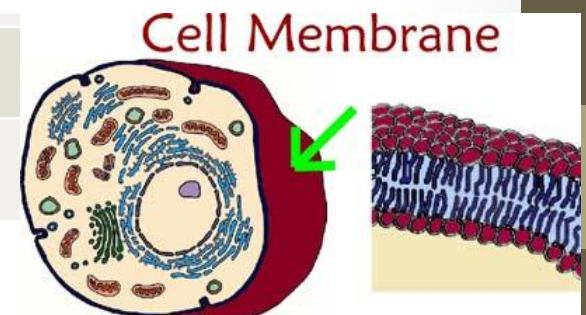
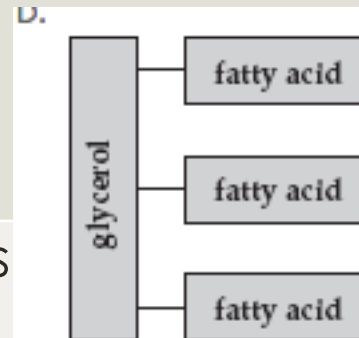
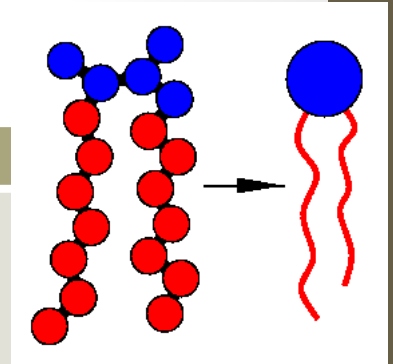
	CARBOHYDRATES
Function: <i>How do they help you survive?</i>	- Supplies short-term energy - Gives structure
Monomer	Monosaccharides ("one sugars")
Polymer Structure Diagram	
Examples	- Glucose (sugar) - Cellulose (in cell walls) - Starch
Atoms	C, H, O
Organic?	YES!



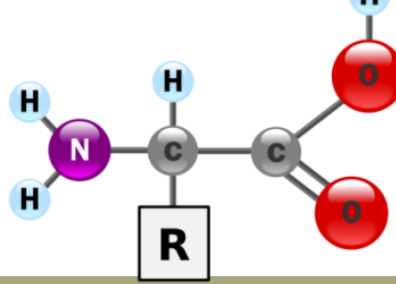
Lipids



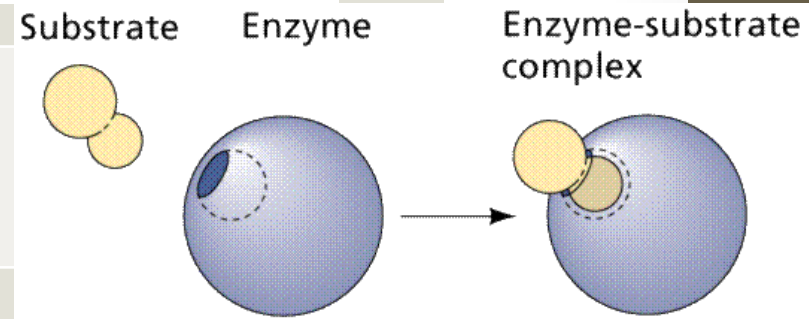
	Lipids
Function: <i>How do they help you survive?</i>	- Stores long-term energy - Main component of cell membranes
Monomer	Glycerol and Fatty Acid Chains
Polymer Structure Diagram	
Examples	- Fats, Oils, Waxes - Cell membrane
Atoms	C, H, O
Organic?	YES!



Proteins



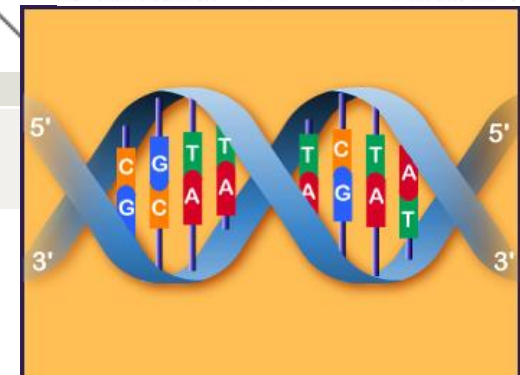
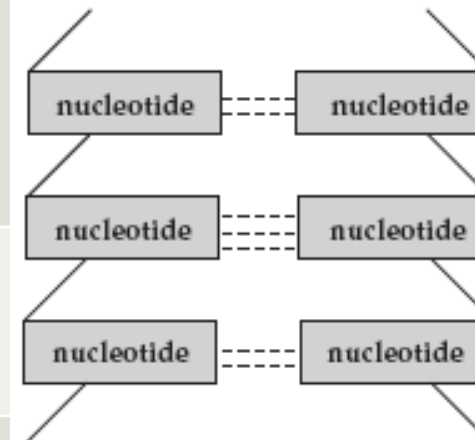
	Proteins
Function: <i>How do they help you survive?</i>	• Runs cell reactions • Gives structure • Sends messages throughout body • Displays our traits
Monomer	Amino Acids
Polymer Structure Diagram	
Examples	• ENZYMES • Hair, nails, etc. • Hormones
Atoms	C, H, N, O, P, S
Organic?	YES!



Nucleic Acids

	Nucleic Acid
Function: <i>How do they help you survive?</i>	- Stores genetic information - Codes for our traits (characteristics)
Monomer	Nucleotides (sugar, phosphate, base)
Polymer Structure Diagram	
Examples	- DNA - RNA
Atoms	C, H, N, O, P
Organic?	YES!

Phenotype = Blue Eyes  Genotype =bb <u>Recessive</u> =b	Phenotype =Brown Eyes  Genotype = Bb or BB Dominant =B
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Whiteboard Review

- Get a whiteboard and a marker
- Answer the questions that come on the screen.
- Keep track of your own score!

What do you know about...MACROMOLECULES

- These are made of nucleotides
- These supply short term energy
- Feathers of a bird that are waxy to repel water are probably coated in this
- Examples of these are Enzymes
- These are the building blocks of proteins
- These macromolecules can also be found as a part of a nucleotide (THINK)!
- Enzymes do this to chemical reactions
- These supply long term energy storage
- These help the cell do work
- All macromolecules are this, meaning they contain carbon.

Clean Up

- Books in the center of the table
- Marker/scissors back in box
- Whiteboards and markers to the front
- TURN IN: White WWO
- GLUE/TAPE your foldable in your book

Exit Slip

1. A dog gets many nutrients from its food including amino acids. Which of these can be built directly using the amino acids?
 - A. proteins
 - B. carbohydrates
 - C. lipids
 - D. minerals
2. Which of these are the repeating units that form a DNA molecule?
 - A. fatty acids
 - B. nucleotides
 - C. amino acids
 - D. chromosomes