***\*Fill in EVERYTHING!* Macromolecule Chart Organic molecules are based on CARBON.**

**Elements: C = Carbon, H = hydrogen, N= nitrogen, O= oxygen, P= phosphorus, S= sulfur**

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| **Macromolecules,**  **Biomolecules,**  **Organic Compunds** | **Elements**  **CHNOPS** | **Subunits *A-K-A***  **Monomers *A-K-A***  ***Building Blocks*** | **Functions:**  Why are they important? | | **Examples:**  Where can we find them? | | **Test(s)**  ***(Indicators)*** |
| **Carbohydrates** | \_\_\_\_\_\_\_\_\_  Ex:  C6H12O6  Glucose (simple sugar) | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ -plant  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - animal  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_– glucose, fructose, sucrose  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_– plant cell walls | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: turns purple/blue/black in starch  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: turns red, orange or green in simple sugars such as glucose |
| **Lipids: *Fats*** | \_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | \*\_\_\_\_\_\_\_\_\_\_\_: store body heat  \*\_\_\_\_\_\_\_\_\_: cell membranes  \*\_\_\_\_\_\_\_\_\_\_\_ energy storage | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Or  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| **Nucleic Acids**  Found in the cell nucleus | \_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | \_\_\_\_\_\_\_\_\_\_\_\_\_and\_\_\_\_\_\_\_\_\_\_ genetic information | **DNA**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **RNA**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | No Indicator test  **BUT**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is used to see the presence. |
| **Proteins** | \_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \*Peptide bonds forming a polypeptide chain (protein) | \*Change the rate of \_\_\_\_\_\_\_\_\_\_\_ (enzymes)  \* \_\_\_\_\_\_\_\_\_\_\_  \*\_\_\_\_\_\_\_\_\_\_\_ | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_-  **Ends in “ase”**  \*Hemoglobin  Carries oxygen in blood. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: blue solution turns violet in proteins |

***\*Fill in EVERYTHING!* Macromolecule Chart Organic molecules are based on CARBON.**

**Elements: C = Carbon, H = hydrogen, N= nitrogen, O= oxygen, P= phosphorus, S= sulfur**

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| **Macromolecules,**  **Biomolecules,**  **Organic Compunds** | **Elements** | **Subunits *A-K-A***  **Monomers *A-K-A***  ***Building Blocks*** | **Functions:**  Why are they important? | **Examples:**  Where can we find them? | **Test(s)**  ***(Indicators)*** |
| **Carbohydrates** | C,H,O  Carbon, hydrogen, oxygen  Ex:  C6H12O6  Glucose (simple sugar) | monosaccharides (simple sugars) | \*Short-term energy storage  \*Quick-release energy | \*Starch -plant  \*Glycogen - animal  \*Sugars – glucose, fructose, sucrose  \*Cellulose – plant cell walls | Iodine: turns purple/blue/black in starch  Benedict’s Solution: turns red, orange or green in simple sugars such as glucose |
| **Lipids: *Fats*** | C,H,O | 1 glycerol and  3 Fatty Acids  =Triglyceride | \*Insulation: store body heat  \*Protection: cell membranes  \*Long-term energy storage | Fats  Oils  Waxes  Steroids  Cholesterol | Brown Paper Bag Test  Or SudanIV |
| **Nucleic Acids**  Found in the cell nucleus | C,H,O,N,P | Sugar, Phosphate, Nitrogen base. | Store and transmit genetic information | **DNA**  Deoxyribonucleic acid  **RNA**  Ribonucleic acid | No Indicator test  **BUT**  Gel Electrophoresis is used to see the presence. |
| **Proteins** | C,H,N,O, P,S | Amino Acids  \*Peptide bonds forming a polypeptide chain (protein) | \*Change the rate of chemical reactions (enzymes)  \* Structure  \*Transport | \*Enzymes-  **Ends in “ase”**  \*Hemoglobin | Biuret’s Test: blue solution turns violet in proteins |