**BIOMOLECULE FRQ Peer REVIEW/ EDIT**

Name of person's paper _____ Date _____ Period _____

Name of Reviewer _____

**Directions:** You will need *4 different colored pencils* to find and highlight the evidence in the paper you are reviewing. When you find evidence, use the letters **A, B, C, D** to show what **Part** of the rubric the student showed evidence for. I will guide you through one example during class.

| Criteria | Points |
|---|---|
| **Part A- Addressed why carbon is important:**<br>□ Carbon has 4 valance electrons, therefore can form many types of bonds, single, double, triple ect…and structures, like long chains and pentagonal and hexagonal shapes,<br>□ Carbon is able to make many complex structures like the 4 biomolecules<br>□ Introduced the 3 macromolecules of interest-<br>*Which molecules are going to be discussed?* | 1 – *valence electron*s<br>1- *different shapes*<br>1- *complex structure*<br>1- *biomolecule intro*<br>*Total 4pts* |
| **Part B- Addressed structure of 3 macromolecules** | |
| □ **Carbohydrates: (3 points max)**<br>-monomers join together w/ glyosidic bonds to make disaccharides + water<br>-have 1:2:1 ratio CHO<br>-it has a hexagonal structure, sometimes pentagonal / carbon rings<br>□ **Lipids: (3 points max)**<br>-made of glycerol and fatty acid chains<br>-long chains of carbon surrounded by hydrogen<br>-they contain a carboxyl group at the end of each fatty acid<br>-can be unsaturated and saturated and discuss the differences<br>-phospholipids are polymers that have two fatty acid chains and a phosphate group.<br>- most are hydrophobic in nature<br>□ **Proteins: (3 points max)**<br>-chains of amino acids, monomer is amino acid<br>- make peptide bonds<br>-take on levels of organization, primary, secondary, tertiary, quaternary<br>-consist of a carboxyl and amine group<br>-the differences in each amino acid come from the "R" group which is the side chain that makes the individual 20 amino acids different.<br>□ **Nucleic Acid (3 points max)**<br>-consists of nucleotide monomers<br>-nucleotides = 5-carbon sugar, a phosphate group and nitrogenous base.<br>-form phosphodiester bonds between the sugar and phosphate groups of each nucleotide.<br>-in RNA it is made of a single helix, DNA is double. | 3<br>3<br>3<br>3<br>*Total pts 9* |
| **Part C: Discuss two examples from life for each of the three macromolecules** | |
| □ **Carbohydrates ( 2 points max)**<br>-Any monosaccharide (e.g. glucose, fructose, galactose, ribose, etc.): major energy source in living things<br>- Starch: plant storage form of energy<br>-Cellulose: fiber-like structural material used in plant cell walls<br>- Glycogen: animal short-term storage form of energy<br>-Chitin: structural material (arthropod exoskeleton and fungal cell walls) | 2 |

| | |
|---|---|
| **Part C: Continued**<br>□ **Lipids**<br>-Triglycerides: energy storage, insulation, shock absorption<br>-Phospholipids: Main structural component of membranes, where they arrange in bilayers.<br>-Waxes: Lipids that serve as coatings for plant parts and as animal coverings. --Steroids: Component of animal cell membranes and/or modified to form sex hormones<br>□ **Proteins**<br>-enzymes, structural in cells,<br>- part if the immune system,<br>-transporters in and out of cells<br>-any other example of a protein with function listed; such as Hemoglobin: an oxygen-transport protein in red blood cells<br>□ **Nucleic Acids**<br>- DNA, RNA, ATP tell why they are important | 2<br>2<br>2<br>*Total pts 6* |
| **Part D: How are polymers created from monomers?**<br>□ All macromolecules, lipids, carbohydrates, proteins or nucleic acids are all made by linking monomers together by dehydration synthesis or condensation reaction.<br>*Full credit by stating all 3 macromolecules of interest are made in this way*<br>□ Should of written the monomer (reactants) for each and the products, (polymer + $H_2O$) (<br>*Must discuss all 3 macromolecules, reactants and products when making monomers into polymers.*<br>□ During digestion these macromolecules are taken apart, by hydrolysis, must explain what happens here,<br>*No need to mention all 3 but give an example from one macromolecule* | 3<br>6<br>1<br>*Total pts 10* |