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|  | **Carbohydrates** | **Proteins** | **Nucleic Acids** | **Lipids** |
| **Monomers**  **“building blocks”**  **Examples:** |  |  |  |  |
| **Di-**  - joined together by dehydration synthesis |  |  |  |  |
| **Polymer**  - joined together by dehydration synthesis |  |  |  |  |
| **Function in Living Organisms** |  |  |  |  |
|  | **Carbohydrates** | **Proteins** | **Nucleic Acids** | **Lipids** |
| **Monomers**  **“building blocks”**  **Examples:** | Monosaccharides  “simple sugars”  Examples   * glucose * fructose | Amino Acids  20 different ones  Examples   * Leucine * Serine * Aspartic acid | Nucleotides  Three parts of a nucleotide   * pentose sugar * Phosphate group * 1 of 4 nitrogenous bases | Fatty Acid chains  Phosphate groups |
| **Di-**  - joined together by dehydration synthesis | Disaccharides  - two monosaccharides joined together  Examples   * Maltose * Sucrose * lactose | Dipeptide  - two amino acids joined together with a peptide bond | Dinucleotide  - two nucleotides joined together |  |
| **Polymer**  - joined together by dehydration synthesis | Polysaccharides   * Starch – storage in plants * Glycogen – storage in animals * Cellulose – component of cell walls * Chitin – exoskeleton of insect and crustaceans | Polypeptide  4 Levels of Structure   * Primary – sequence of amino acids * Secondary – alpha helix or beta pleated sheet * Tertiary – three-dimensional shape * Quaternary Structure – more than one polypeptide chain | Polynucleotides  DNA   * double-stranded * double helix * located in nucleus   RNA   * Single-stranded * Many forms * Located in nucleus and cytoplasm | (do not form polymers)  Triglyceride  Phospholipid  Steroids  Waxes |
| **Function in Living Organisms** | Function of Glucose:  Raw materials  Main fuel for cells | Structural Protein  Defense – antibodies  Signaling - hormones  Receptors; Transport;  Storage | Basis of heredity  “codes” for proteins | Storage of energy  Protection  Insulation  Hormones |