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| Biomolecules |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is often called the building block of life. | Carbon is the most important atom found in \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.It can join to \_\_\_\_\_\_\_\_\_\_\_\_\_other atoms at the same time.It can also form \_\_\_\_\_\_\_\_\_\_\_\_and\_\_\_\_\_\_\_\_\_\_, meaning it can make many \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_molecules. These carbon-based molecules are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_molecules. They are found in \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |
| Due to its special bonding properties, carbon can form large molecules called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.Macro= large Mono- one, singularPoly- many, multiples  | Macromolecules are made up of smaller subunits called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. When monomers link together, they form\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. A polymer is a macromolecule made up of many monomers. You can think of monomers and polymers like links in a chain or a watch band. If the chain below was a molecule, circle the polymer and box 2 monomers.  |
| Four Major Macromolecules |
| 1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| **CARBOHYDRATES** |
| Carbohydrates are the main source of \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_. They are our \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_of fuel.  | They are made of monomers called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, simple sugars, like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  | Carbohydrate molecules made of only one sugar molecule are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Example:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, used for \_\_\_\_\_\_\_\_\_ Ribose and Deoxyribose, used to \_\_\_\_\_\_\_\_\_\_\_\_\_our \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_. |
| The suffix –ose usually indicates a type of sugar. Example: glucose, fructose, riboseImage result for bread coloringCarbohydrates found in our diet* + \_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Image result for baked potato coloring\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Whole grains
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (potatoes, corn..)
 | Monosaccharides can be joined together to make\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, carbohydrates made of \_\_\_\_\_\_\_\_\_\_\_\_sugar molecules. Examples of important polysaccharides:1. \_\_\_\_\_\_\_\_\_\_\_\_\_- how \_\_\_\_\_\_\_\_\_store glucose
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_- keeps plant \_\_\_\_\_\_\_\_\_\_\_strong
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- how \_\_\_\_\_\_\_\_\_\_\_\_

cells store glucose  |
| **PROTEINS** |
| Proteins are built from \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_monomers (subunits)Amino acids link together like beads on a necklace to form\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.This is why proteins are sometimes calledpolypeptidesThe \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(order of) amino acids in the protein chain determines what \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_will be made. The \_\_\_\_\_\_\_\_\_\_\_of the amino acids is determined by \_\_\_\_\_\_\_\_\_\_\_in the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  | There are \_\_\_\_\_\_\_\_different amino acids used by cells to make proteins. The amino acids are put together using peptide bonds.   Your \_\_\_\_\_\_\_\_\_\_\_\_can make \_\_\_\_\_\_\_\_\_ofthese amino acids; the others come from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_that you eat. If we think of proteins like these necklaces, how could you change them to make them different? Hint: It has the same effect on proteins with amino acids  |
| Proteins have many different jobs like…Make up\_\_\_\_\_\_\_\_\_\_\_\_\_\_, ligaments, tendons, hair and skinAct as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to speed up chemical reactionsAlso act as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_like insulin; \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_controls blood sugar levels. Proteins in \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_help \_\_\_\_\_\_\_\_\_\_\_\_\_molecules in & out of cells | Image result for dairy coloringFood sources for protein include\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_products like milk and cheese. Image result for cheese coloring |

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| **LIPIDS**  |
| Image result for lipids coloringLipids are composed of monomers called \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_. A typical lipid has \_\_\_\_\_ fatty acids tails bonded to a molecule called a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  |
| Lipids are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; this means they do \_\_\_\_\_\_\_have opposite charges.Water is\_\_\_\_\_\_\_\_\_\_\_\_\_; it does have opposite \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, like a magnet. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_is a lipid that joins with proteins to make \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(cell membranes wrap around the outside of the cell kind of like skin)A phospholipid is still non-polar, but it is also has a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_section and a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_section. Label:Hydrophilic sectionHydrophobic sectionGlycerolFatty acids Image result for polar bear coloringLipids can be used to store energy \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.Lipids help maintain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (balance), act as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (testosterone and estrogen), and can provide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(fruit, ears and bees!)Lipids are found in \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_.They store huge amounts of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_in organisms.  | **Related imageRelated imageRelated imageRelated imageSide note: Water** Water is made of \_\_\_\_Hydrogens atoms and \_\_\_\_Oxygen atom; these are heldtogether by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_bonds. Water molecules bond to other water molecules because the\_\_\_\_\_\_\_\_\_\_\_\_\_\_charged part of one is attracted tothe \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_part of another,like magnets; these are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_bonds and are \_\_\_\_\_\_\_\_strong. In the image below, circle all of the covalent bonds and box all of the ionic bonds. Hydro- means water-philic means loves, likes-phobic means hates, afraid ofImage result for apple coloringWhy would fruits needs lipids for waterproofing? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| **NUCLEIC ACIDS** |
| Nucleic acids are made from monomers called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  | Each nucleotide has \_\_\_\_\_\_ parts1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_base
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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| There are \_\_\_\_\_\_\_\_\_\_\_ types of nucleic acids. | 1. \_\_\_\_\_\_\_\_\_\_\_- stores \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_information
2. \_\_\_\_\_\_\_\_\_\_\_- carries \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_from DNA to the cell so proteins can be made
3. \_\_\_\_\_\_\_\_\_\_\_- used by cells to \_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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| The structure of ATP:Be careful! It looks a lot like a regular nucleotide, but ATP has 3 phosphates attached, not just one.  |  |