

## AP Biology 042 – Biological Molecules

### Video Review Sheet

[www.bozemanscience.com/042-biological-molecules](http://www.bozemanscience.com/042-biological-molecules)

1. What are the four categories of macromolecules?
2. What is a monomer?
3. Lipids are unique because they don't have a single type of monomer. Name two reasons why lipids are important.
4. Lipids are generally polar molecules. T/F circle one
5. Nucleic acid monomers are \_\_\_\_\_ and are made up of \_\_\_\_\_
6. What are the functions of nucleic acids?
7. Protein monomers are:
8. What differentiates one amino acid from another?
9. Carbohydrate monomers are
10. The significance of "directionality" of the monomers in a polymer is that when you put the monomers together in a certain sequence/order they have
  - a. The process of "putting monomers together" is called
  - b. What is lost during the process of #11?
  - c. What kind of bond is formed generally? Specifically between amino acids of a protein?
  - d. What must be added to break the bonds?
  - e. What is the name of that process?
11. Concerning **Nucleic Acids**:
  - a. What are the two examples of nucleic acids he gave? (btw ATP is also an example)
  - b. What is a nucleotide and what are its three parts?
  - c. What are differences between DNA and RNA?
  - d. What are the four nucleotides in DNA? RNA?
  - e. When you see 3' and 5', this is referring to the nucleic acid's directionality and specifically to the carbons found in the

f. What makes DNA antiparallel?

12. Concerning **Proteins**:

- a. The protein monomer is:
- b. How many amino acids are there?
- c. Draw and label a basic amino acid in the box to the right.



- d. What part of the amino acid differentiates it from another?
- e. What is the directionality of a protein?
- f. What is the significance of the directionality in protein digestion?

13. Concerning **Lipids**:

- a. List the different types of lipids (4):
- b. What is the similar structure between the four?
- c. What is significant about hydrocarbons found in lipids? (2):
- d. What is unique about phospholipids?
- e. What does amphipathic mean?
- f. What is the difference between saturated and unsaturated fatty acids?
- g. Why do unsaturated fats bend?
- h. Why is margarine a solid though it originates from plants? (btw, butter is *solid* at room temperatures)

14. Concerning Carbohydrates:

- a. Carbohydrates give us: (2)
- b. Carbohydrate monomers are
- c. What are the two types of glucose molecules indicated?
- d. What determines directionality in carbohydrates?