

Summer Assignment

Course: AP Biology

Instructor: Dr. Moni Berg-Binder

Due Date: 1st day of class, Fall 2023

Overview: Biology relies heavily on a basic understanding of chemistry. This summer assignment serves as a review of some foundational chemistry concepts.

Directions: Answer the following questions *in your own words*.

1. Explain how the concepts of atoms and molecules are related to each other.
2. Contrast non-polar covalent and polar covalent bonds.
3. Draw a Lewis structure of a water molecule. Then, indicate the polarity of the water molecule.
4. The molecular formula for glucose is $C_6H_{12}O_6$. How would you explain what this means to an 8-year-old? You can explain it in words, pictures, or both.

5. An atom has 8 neutrons, 7 electrons, and 7 protons.
- What is the name of the element for this atom? How do you know this?
 - Draw the atomic structure for this atom. You can choose the style of the atomic diagram but it must clearly show the correct number and place of neutrons, electrons, and protons.