

## **Summer Assignment**

**Course:** AP Biology

**Instructor:** Dr. Moni Berg-Binder

**Due Date:** 1st day of class

**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. Explain how the concepts of atoms and ions are related to each other.
3. What are covalent bonds? Contrast non-polar covalent and polar covalent bonds.
4. Draw a Lewis structure of a water molecule. Then, indicate the polarity of the water molecule.

5. 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.

6. What are the four types of biological molecules? Give an example of each.