

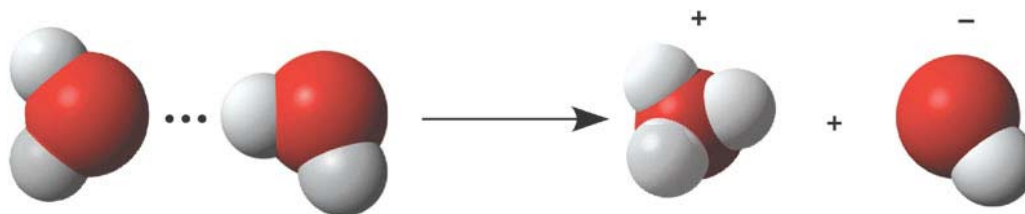
**MCC Biology**  
**Chapter 3 Guided Reading Assignment**

**Name** \_\_\_\_\_

1. Why is water considered a polar molecule?
  
2. For each of the below listed properties of water – briefly define the property and then explain how water’s polar nature and polar covalent bonds contribute to the water special property. Include an example in nature of each property also.
  - a. Cohesion
  
  - b. Adhesion
  
  - c. Surface tension
  
  - d. High specific heat
  
  - e. Heat of vaporization
  
  - f. Evaporative cooling
  
3. What is special about water and density?
  
4. Define the following terms:
  - a. Solute
  
  - b. Solvent
  
  - c. Aqueous solution
  
  - d. Hydrophilic

- e. Hydrophobic
- f. Colloid
- g. Hydration shell
- h. Molarity

5. Label the diagram below to demonstrate the dissociation of the water molecule and then relate this diagram to pH.



6. What defines an acid and a base?

7. Why are “apparently” small changes in pH so important in biology?

8. What is a buffer and write and explain the carbonic acid buffer system in human blood – yes we are back to the equation AGAIN!

9. What is acid precipitation and why is it important to living organisms?