

Reading Guide for

Sponges and Bubbles: A Refreshed Investigation of pH and Buffers

by

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Complete this reading guide as you read the textbook pages assigned to you. You might not have to read every word on every page, rather pay close attention to the questions in this guide and answer them as you work through the textbook. Also pay close attention to the terms in the list below. These are key terms that you should know the definitions of and be able to apply in new situations.

Vocabulary List

Atom	Covalent bond	Hydrophobic
Matter	Ionic bond	Amphipathic
Proton	Hydrogen bond	Cohesion
Neutron	Cation	Surface tension
Electron	Anion	Adhesion
Ion	Molecular formula	Density
Chemical reaction	Electronegativity	Acid
Element	Solvent	Base
Isotope	Solute	pH
Atomic number	Aqueous solution	Neutralization
Atomic mass	Polar	Buffer
Valence electrons	Nonpolar	
Radioactive isotope	Hydrophilic	

Questions

Answer the following questions with details from the textbook on a separate sheet of paper.

1. From smallest to largest, please list the levels of organizations and classify them into “non-living,” and “living.”
2. What makes up a subatomic particle? If you attempted to identify an element, what key characteristics would you take into consideration?
3. There are three types of chemical bonds important in biology. Compare and contrast these types of bonds.
4. Water is essential to life. Explain the properties of water that make it such a unique and important molecule.
5. Why is understanding of pH important for life? Explain what causes changes in pH and how they are naturally fixed.
6. *Personal Connection:* Create a one to two sentence personal connection, as a way to relate course material to something about your life. Do not just restate a concept, make sure that it includes application to the real world.