

Chemistry of Life (Chapter 2)

# Vocabulary Practice

atom	adhesion	carbohydrate	bond energy
element	solution	lipid	equilibrium
compound	solvent	fatty acid	activation energy
ion	solute	protein	exothermic
Ionic bond	acid	amino acid	endothermic
covalent bond	base	nucleic acid	catalyst
molecule	pH	chemical reaction	enzyme
hydrogen bond	monomer	reactant	substrate
cohesion	polymer	product	

**A. Who Am I? Choose among these terms to answer the riddles below:**

activation energy	enzyme	nucleic acid
bond energy	fatty acid	pH
carbohydrate	hydrogen bond	protein
compound	ion	solution
endothermic	molecule	substrate

1. I am a chemical reaction that absorbs more energy than I release; my products have a higher bond energy than my reactants. \_\_\_\_\_
2. I am an attraction between a slightly positive hydrogen atom and a slightly negative atom, such as oxygen or nitrogen. \_\_\_\_\_
3. I am the type of molecule that stores genetic information in living things; I include DNA and RNA. \_\_\_\_\_
4. I am the amount of energy needed to break a chemical bond; I am also the amount of energy released when a bond forms. \_\_\_\_\_
5. I am a certain type of mixture; I am formed when one substance, such as water, dissolves other substances. \_\_\_\_\_
6. I allow chemical reactions to take place under the tightly controlled conditions in living things; in almost all cases I am a protein. \_\_\_\_\_

- 7. Chemical bonds hold me together; I always contain atoms of more than one element. \_\_\_\_\_
- 8. I am a carbon chain found in many lipids; I can be either saturated or unsaturated. \_\_\_\_\_
- 9. I have a positive charge if I lose an electron, or I have a negative charge if I gain an electron. \_\_\_\_\_
- 10. I am a reactant an enzyme acts on; I bind to an enzyme's active site. \_\_\_\_\_
- 11. Many different types of me have many different functions in living things; I am made of amino acids. \_\_\_\_\_
- 12. I measure the hydrogen ion concentration in a solution; when I am low a solution is very acidic. \_\_\_\_\_
- 13. I am the amount of energy that is needed for a chemical reaction to start; after I am added, the reaction can take place on its own. \_\_\_\_\_
- 14. I am held together by covalent bonds; I can be made of atoms of just one element. \_\_\_\_\_
- 15. Carbon, hydrogen, and oxygen are my building blocks; sometimes I am broken down as a source of energy, and sometimes I make up plant cell walls. \_\_\_\_\_

**B. Same or Different?** Each pair of words could either describe the same thing or different things. If they can describe the same thing write “**same**.” If they cannot describe the same thing write “**different**.”

- \_\_\_\_\_ 1. catalyst/enzyme
- \_\_\_\_\_ 2. atom/element
- \_\_\_\_\_ 3. cohesion/adhesion
- \_\_\_\_\_ 4. monomer/polymer
- \_\_\_\_\_ 5. exothermic/endothemic
- \_\_\_\_\_ 6. substrate/reactant
- \_\_\_\_\_ 7. solvent/solute
- \_\_\_\_\_ 8. compound/element
- \_\_\_\_\_ 9. acid/base
- \_\_\_\_\_ 10. enzyme/protein

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

**C. Compound Word Puzzle** Read the phrase and write the word that it most closely describes. Then write another phrase that describes the same word in a different way.

PHRASE 1	WORD	PHRASE 2
smallest basic unit of matter	<b>Example</b> atom	<i>contains protons, neutrons, and electrons</i>
enters a chemical reaction	1.	
atom that has gained or lost electrons	2.	
held together by covalent bonds	3.	
dissolves a solute	4.	
releases a hydrogen ion into a solution	5.	
reactants have a greater bond energy than products	6.	
substance that decreases activation energy	7.	
includes sugars and starches	8.	

**D. Find the Odd Word Put a checkmark next to the word that does not belong.**

Put a checkmark next to the one that does not belong **and explain why**. There may be more than one correct way to answer for some of the word sets.

1. \_\_\_ acid                      Explanation \_\_\_\_\_  
   \_\_\_ hydrogen bond        \_\_\_\_\_  
   \_\_\_ base
2. \_\_\_ compound             Explanation \_\_\_\_\_  
   \_\_\_ atom                    \_\_\_\_\_  
   \_\_\_ element
3. \_\_\_ covalent bond        Explanation \_\_\_\_\_  
   \_\_\_ solution                \_\_\_\_\_  
   \_\_\_ molecule
4. \_\_\_ equilibrium            Explanation \_\_\_\_\_  
   \_\_\_ bond energy            \_\_\_\_\_  
   \_\_\_ exothermic

**E. Situational Vocabulary Circle the letter of the situation that most closely relates to each vocabulary word.**

1. **activation energy:** a) kick-starting a motorcycle; b) eating sugary foods
2. **solute:** a) getting lost in a crowd; b) answering a math problem
3. **ionic bond:** a) linking hands in a human chain; b) passing a basketball
4. **lipid:** a) a car's gas tank; b) a car's headlights
5. **amino acid:** a) lemon juice in iced tea; b) one of many beads on a string
6. **covalent bond:** a) linking hands in a human chain; b) passing a basketball
7. **equilibrium:** a) evenly matched tug-of-war; b) sprinters ready to race
8. **atom:** a) multicellular organism; b) unicellular organism