Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**I CAN** explain photosynthesis and cellular respiration.

Period \_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **STUDY GUIDE** for Chapter 4 Section 2—Cell Energy

* **complete this study guide**
* **study—this study guide**
* **Make and study flash cards**

If you **do not receive a passing grade**

on this test, in order to retake it you are

required to: **have your parent**

 **sign this study guide.**

My child had completed this study guide, studied, and is ready to retake this test.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

parent signature

**PHOTOSYNTHESIS**



 1. What kind of organisms have photosynthesis?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 2. Where does the energy come from for photosynthesis?\_\_\_\_\_

3. What is the photosynthesis all about –the MAIN product? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. What useful gas is released to the air during photosynthesis? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

GIVE A CHEMICAL DEFINITION OF PHOTOSYNTHESIS using these chemical element symbols **C H O** which stand for Carbon, Hydrogen, and Oxygen.

6.

9.

8.

5.

7.

9.

 + + +

REACTANTS

PRODUCT

PRODUCT

10. In which plant part does photosynthesis take place? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (The answer is NOT chloroplasts.)

11. What do chloroplasts do? \_make \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. What happens to the energy from the sun?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13. What happens to the light energy during photosynthesis—is made in to an electrical energy or chemical energy?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14-18. Sketch a plant and place arrows in the sketch showing the photosynthesis cycle. Label arrows with the chemical symbols you used in 5-9 above.

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**I CAN** explain photosynthesis and cellular respiration.

Period \_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**CELL RESPIRATION**



 19. Cell respiration takes place in what organelle? \_\_\_\_\_\_\_\_\_\_\_\_\_

 20. Cell respiration requires what gas to be present? \_\_\_\_\_\_\_\_\_\_

 21. Cell respiration uses what food? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

22. Cell respiration produces what waste and side product? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

23. Cell respiration accomplishes what (main product)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

GIVE A CHEMICAL DEFINITION OF CELL RESPIRATION using these chemical element symbols **C H O** which stand for Carbon, Hydrogen, and Oxygen.

25.

24.

28.

27.

26.

 + + +

P R O D U C T S

REACTANTS

29. Why do you need plants for energy?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

30. What color does bromothymol blue turn to when carbon dioxide is removed?\_\_\_\_\_\_\_\_\_\_

31. What color does bromothymol blue turn to when carbon dioxide is added?\_\_\_\_\_\_\_\_\_\_\_

32-36 Sketch a stick figure and place arrows in the sketch showing the cellular respiration cycle. Label the arrows with the chemical symbols you used in 5-9 above.