

Skills Worksheet

Active Reading

Section: Cellular Respiration

Read the passage below. Then answer the questions that follow.

In the first stage of cellular respiration, glucose is broken down in the cytoplasm during a process called **glycolysis**. Glycolysis is an enzyme-assisted anaerobic process that breaks down one six-carbon molecule of glucose to two three-carbon pyruvates. A molecule that has lost or gained one or more electrons is called an ion. Pyruvate is the ion of a three-carbon organic acid called pyruvic acid. The pyruvate molecules produced during glycolysis still contain some of the energy that was stored in the glucose molecule.

SKILL: READING EFFECTIVELY

Read each question, and write your answer in the space provided.

1. What relationship exists between the cytoplasm of a cell and glycolysis?

2. Glycolysis is classified as an anaerobic process. What does this indicate?

3. What happens to a six-carbon molecule of glucose during glycolysis?

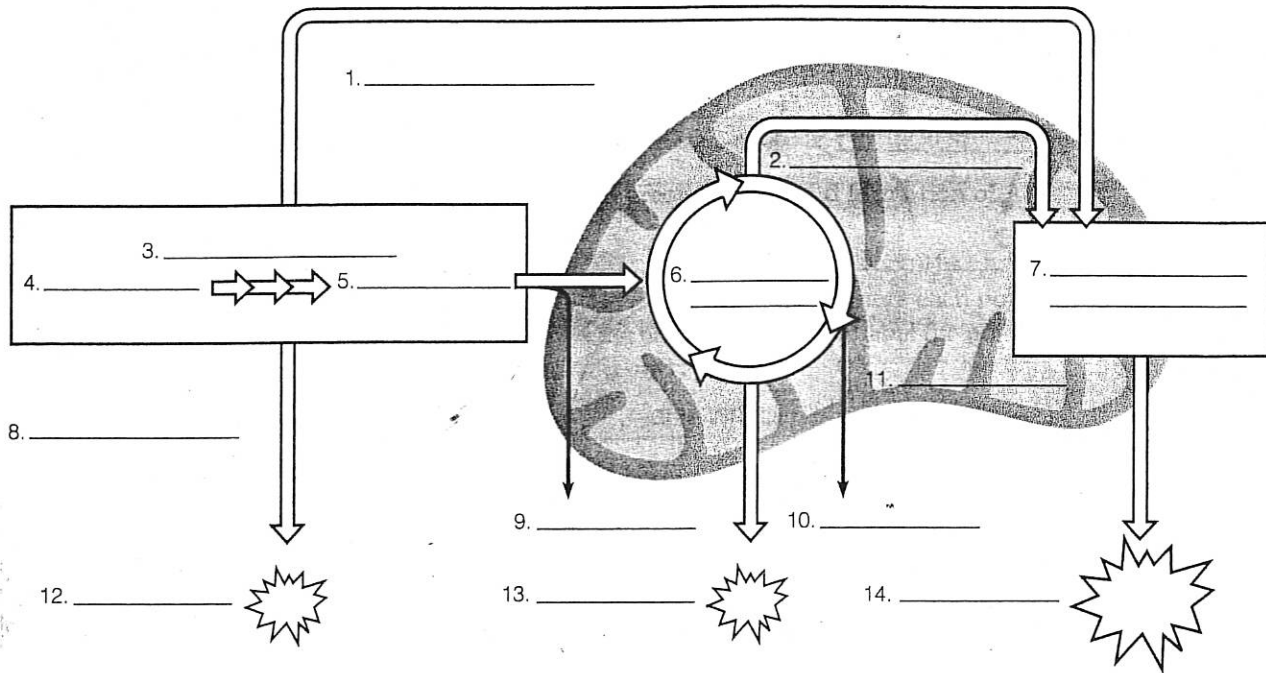
4. What is the source of the energy contained in the pyruvate molecules produced through glycolysis?

In the space provided, write the letter of the term or phrase that best answers the question.

- _____ 5. Which of the following is a product of glycolysis?
- a. two three-carbon molecules of pyruvate
 - b. two ATP molecules
 - c. glucose
 - d. Both (a) and (b)

Exercise 3 (Module 6.6)

Figure 6.6 introduces the three stages of cellular respiration. After studying it, see if you can label the diagram below without referring to the text. Include **oxidative phosphorylation**, **pyruvate**, **mitochondrion**, **CO₂**, **electrons carried by NADH**, **citric acid cycle**, **glycolysis**, **cytoplasm**, **ATP**, **glucose**, and **electrons carried by NADH and FADH₂**. (Note: 3, 6, and 7 are processes, 8 and 11 are places, and the rest are inputs and outputs.)



Note: include the number of ATP molecules produced by each stage.