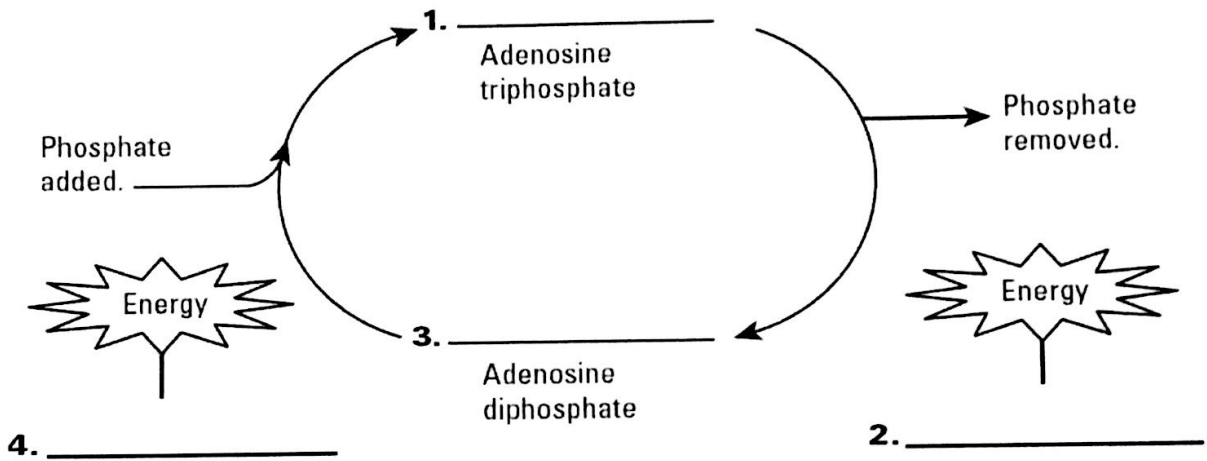


Cellular Energy Review Worksheet

What do all cells use for energy?

What is ATP?

Complete the following diagram about the formation of ATP and ADP with the following terms:
ADP, Energy from breakdown of molecules, ATP, Energy released for cell processes



Read the following paragraph and answer the following questions:

Different types of carbon-based molecules (carbohydrates, lipids, and proteins) can be broken down to produce ATP. The breakdown of the different molecules produces different amounts of ATP. Carbohydrates, especially the simple sugar glucose, are most commonly broken down to make ATP. The breakdown of a lipid produces many more ATP molecules than does the breakdown of a sugar. Proteins are the molecules least likely to be broken down, but they store about the same amount of energy as carbohydrates.

1. What types of molecules are broken down to make ATP? Which are most often broken down to make ATP?

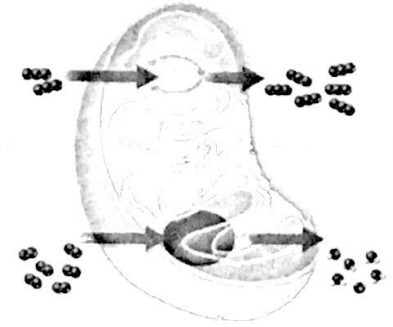
2. Which type of organic compound supplies the most ATP to cells?

3. Apply. Describe how you do not get energy directly from the food that you eat.

Overview of Cellular Respiration and Fermentation

KEY CONCEPT

The overall process of cellular respiration converts sugar into ATP using oxygen.



MAIN IDEA: Cellular respiration makes ATP by breaking down sugars.

1. What is function of cellular respiration?

2. Does glucose actually react with oxygen during cellular respiration? Explain

MAIN IDEA: Cellular respiration is like a mirror image of photosynthesis.

3. In what two ways does cellular respiration seem to be the opposite of photosynthesis?

4. Write the chemical equation for the overall process of cellular respiration. Explain what the equation means. Identify the reactants, products, and the meaning of the several arrows.

5. The prefix glyco- comes from a Greek word that means "sweet." The suffix -lysis comes from a Greek word that means "to loosen." How are the meanings of these word parts related to the meaning of glycolysis?

6. What does it mean to say that glycolysis is an anaerobic process?