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Cell Energy Worksheet

Answer the following questions:

Cellular respiration:

What is cellular respiration and what are its three stages?

Cellular respiration is a chemical process that harvest energy this is stored in sugars and other organic molecules. The three stages are glycolysis, citric acid cycle, and electron transport.

What is the role of glycolysis? Include the reactants and the products. Where does it occur?

Glycolysis is the division of a glucose molecule creating two molecules of the compound pyruvic acid. The initial division of the glucose molecule requires two ATP molecules per glucose. The divided molecules donate NAD^+ , as well as ATP molecules. This process happens in the cytoplasm.

What is the role of the citric acid cycle? Include the reactants and the products. Where does it occur?

The citric acid cycle finishes depleting the energy of sugar by breaking the acetic acid molecules all the way down to CO_2 . The acid joins a four-carbon acceptor molecule to

form a six-carbon molecule, which then breaks down into two three-carbon molecules. One of the three-carbon molecules is converted to CO_2 and the other two-carbon molecule is used again. This process happens in the mitochondria.

What is the role of the electron transport system? Include the reactants and the products. Where does it occur?

The electron transport system carries electrons captured from feeding the electron transport system. The electrons from the electron transport system are used to create ATP. These electrons combine with O_2 and protons to create H_2O . The protons and electrons that make up electron transport create an environment for the production of the mitochondria.