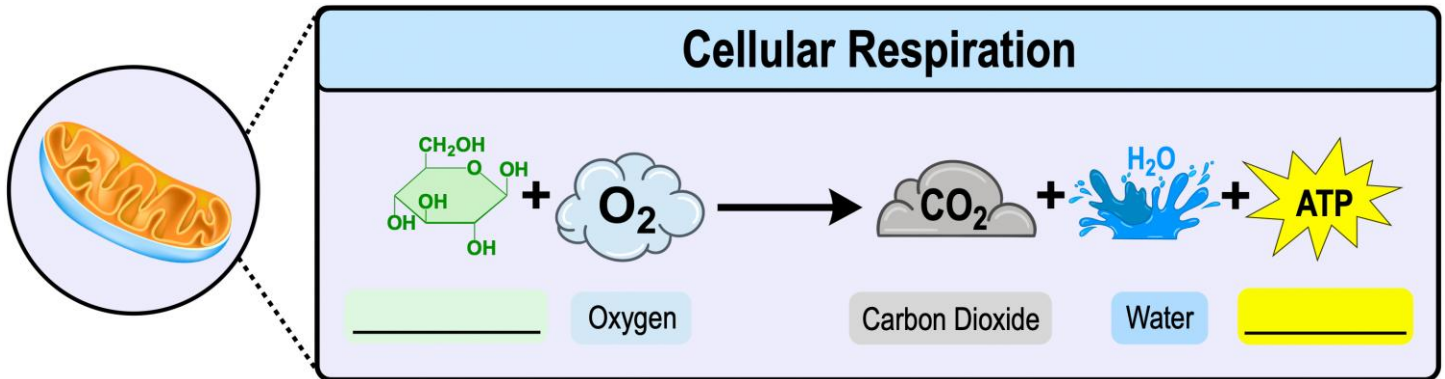


CONCEPT: INTRODUCTION TO AEROBIC CELLULAR RESPIRATION

- **Aerobic Cellular Respiration:** the _____ process of *breaking-down* glucose to make lots of _____.
 - **Aerobic:** requires the presence of _____ gas (O_2).
 - Occurs in multiple stages, *most* of which occur inside of the _____.

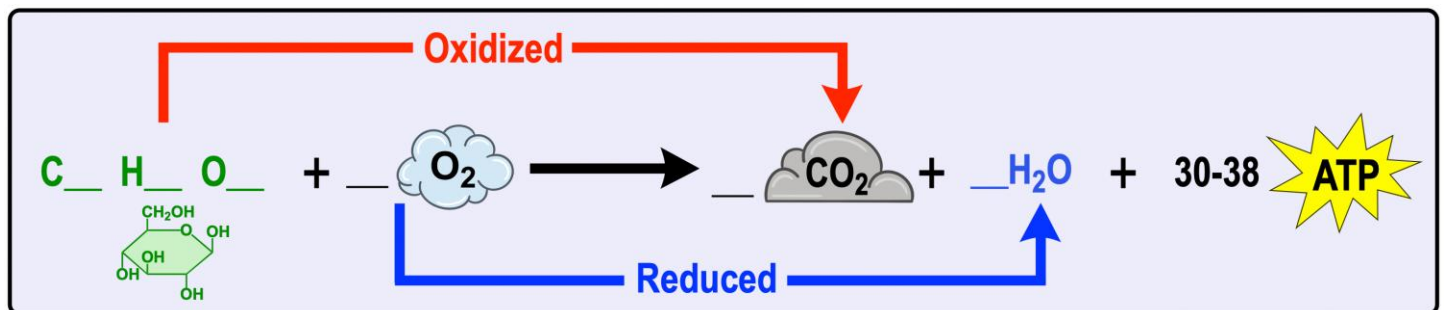
EXAMPLE: Overall Chemical Equation for Aerobic Cellular Respiration.



Aerobic Cellular Respiration is a Redox Reaction

- The overall chemical equation for *Aerobic Cellular Respiration* is a _____ reaction.
 - By the end of the process, glucose is _____ while oxygen is _____.

EXAMPLE: Chemical Equation for Aerobic Cellular Respiration.



PRACTICE: Which one of the following molecules is a by-product of cellular respiration?

- a) Water. b) Glucose. c) Pyruvate. d) Oxygen. e) ADP.

PRACTICE: Which of the summary statements below describes the results of the following reaction?

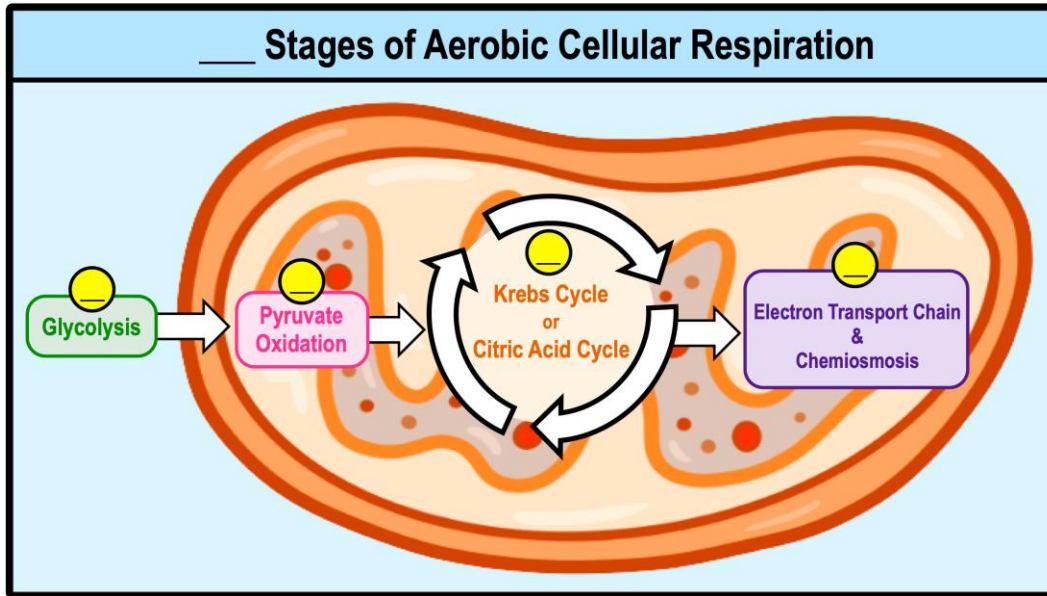


- a) $C_6H_{12}O_6$ is oxidized and O_2 is reduced. c) CO_2 is reduced and O_2 is oxidized.
b) O_2 is oxidized and H_2O is reduced. d) O_2 is reduced and CO_2 is oxidized.

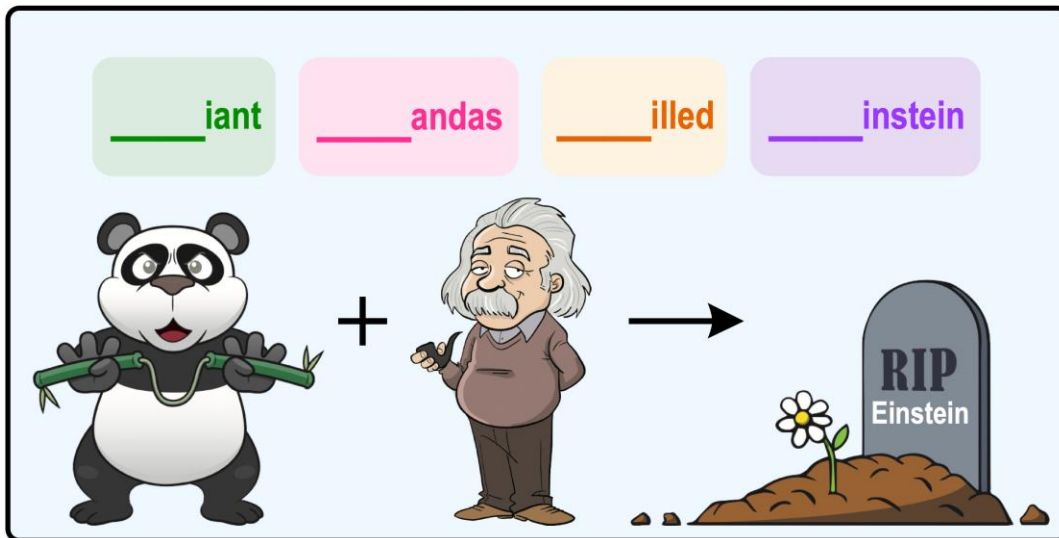
CONCEPT: INTRODUCTION TO AEROBIC CELLULAR RESPIRATION

Stages of Aerobic Cellular Respiration

- Aerobic Cellular Respiration includes _____ metabolic pathways/reactions:



Remembering Stages of Aerobic Cellular Respiration

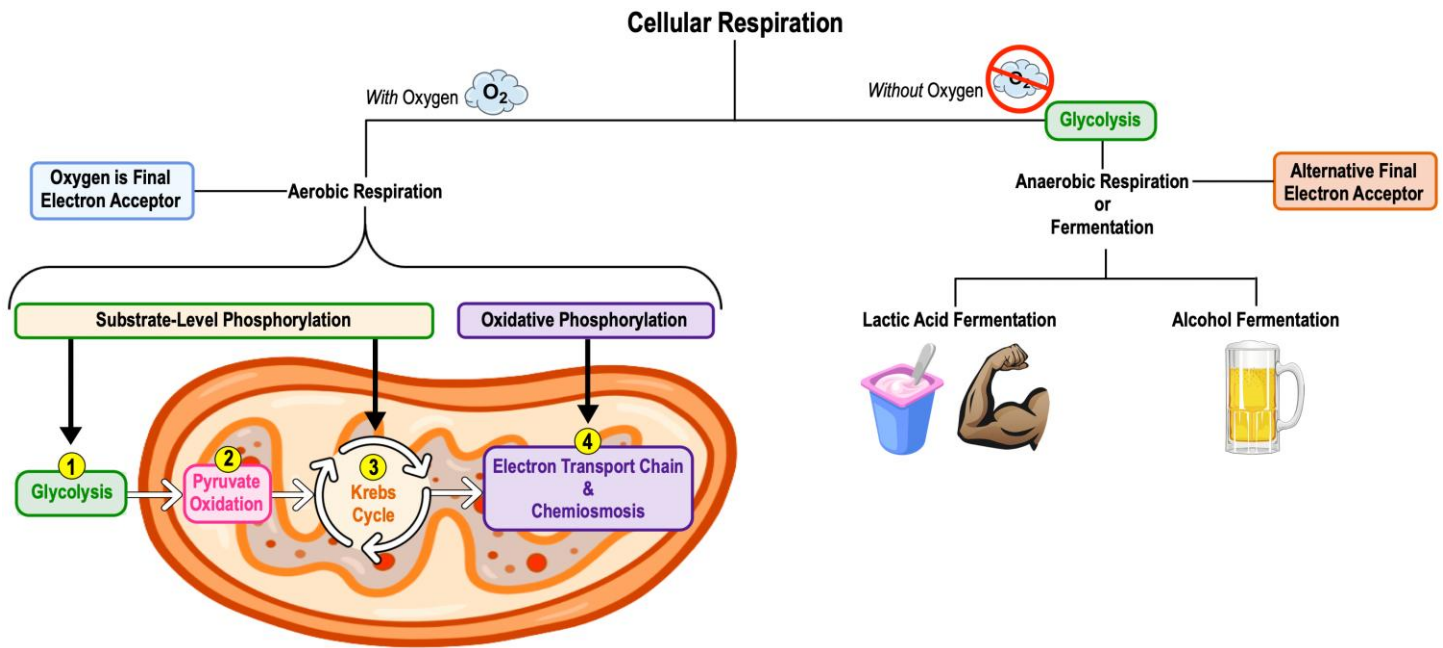


EXAMPLE: Which of the following options lists the stages of aerobic cellular respiration in the correct order?

- Glycolysis, electron transport chain & chemiosmosis, pyruvate oxidation, and Krebs cycle.
- Glycolysis, pyruvate oxidation, Krebs cycle, and electron transport chain & chemiosmosis.
- Pyruvate oxidation, electron transport chain & chemiosmosis, glycolysis, and Krebs cycle.
- Krebs cycle, electron transport chain & chemiosmosis, pyruvate oxidation, and glycolysis.

CONCEPT: INTRODUCTION TO AEROBIC CELLULAR RESPIRATION

Map of the Lesson on Cellular Respiration



EXAMPLE: Using the map above, which of the following occurs in the absence of oxygen (no oxygen)?

- a) Fermentation.
- b) Aerobic respiration.
- c) Oxidative phosphorylation
- d) O_2 serves as the final electron acceptor.

PRACTICE: Based on the map of cellular respiration, why do we need to breathe in oxygen?

- a) Oxygen is the final electron acceptor for lactic acid fermentation.
- b) Oxygen is the final electron acceptor for alcohol fermentation.
- c) Oxygen is the final electron acceptor for aerobic cellular respiration.
- d) Oxygen is not important for the purposes of cellular respiration.