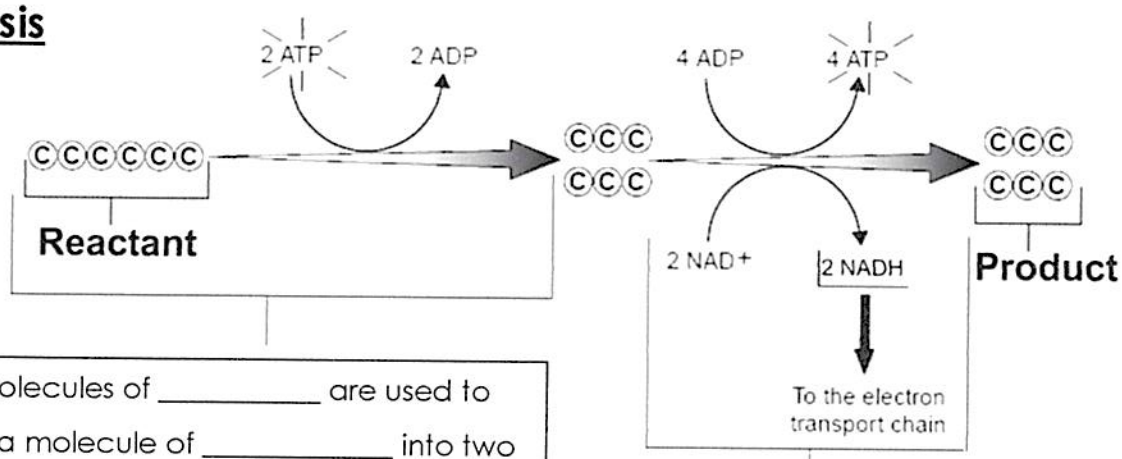
Guided Notes: Reactions of Cellular Respiration

Name: **Biology 11**

Where do each of the stages of cellular respiration occur?

Glycolysis _____ **Krebs Cycle** _____ **Electron transport chain** _____

Glycolysis

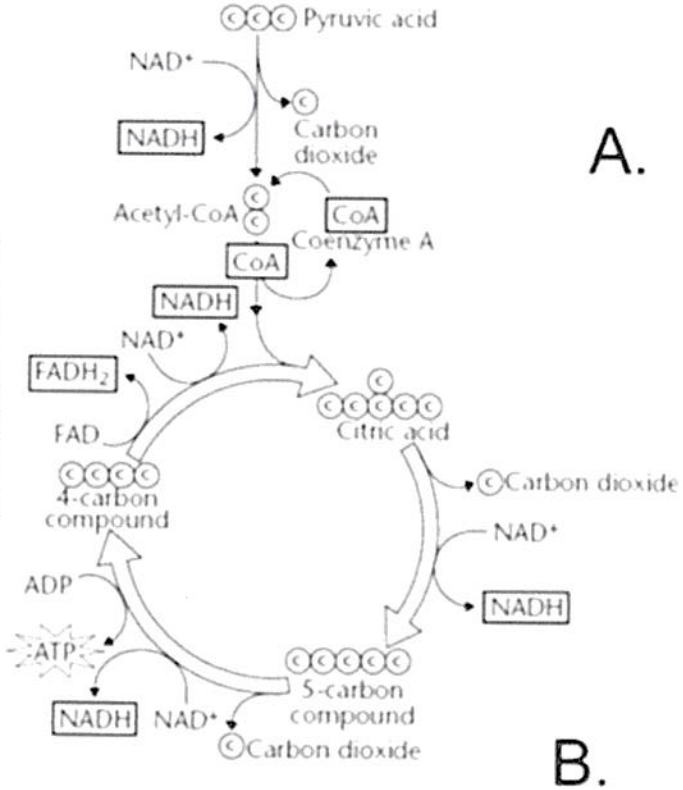


A: 2 molecules of _____ are used to break a molecule of _____ into two 3 carbon molecules of _____ _____.

B: High-energy _____ are collected by a carrier molecule called _____ making _____ which will be used in later steps.

Krebs Cycle

- If oxygen is present after glycolysis the 2 pyruvic acid will move into the mitochondria to continue being broken down; however if oxygen is not present, the pyruvic acid will go through fermentation.



A.

A: A _____ is removed from Pyruvate, forming _____and _____. Carbon molecules are also rearranged to make _____ acid.

C.

C: 1 more _____ is lost making pyruvic acid ready to re-start the cycle and producing more _____.

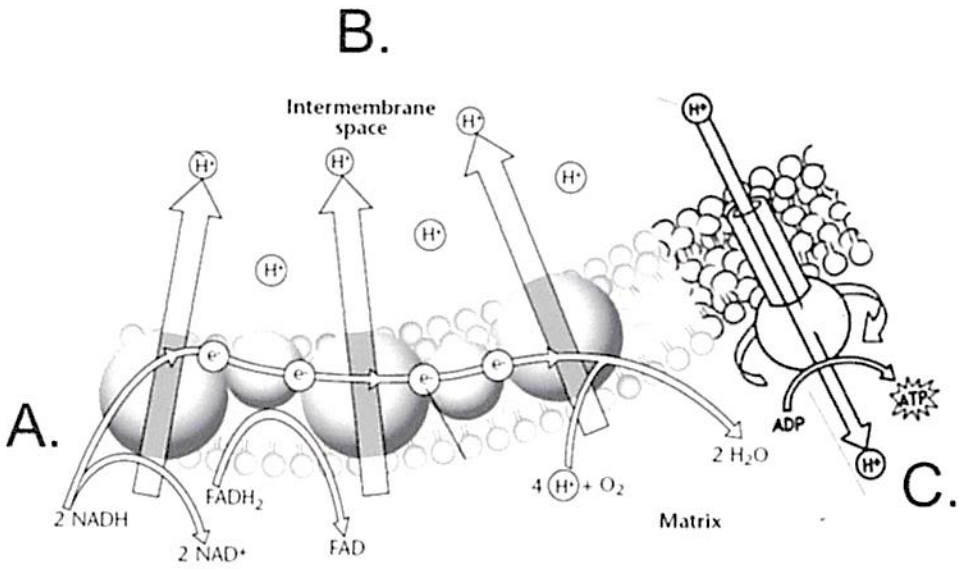
B.

B: Citric Acid is further broken down creating more _____ and some _____ and releasing more _____.

Electron Transport Chain (ETC)

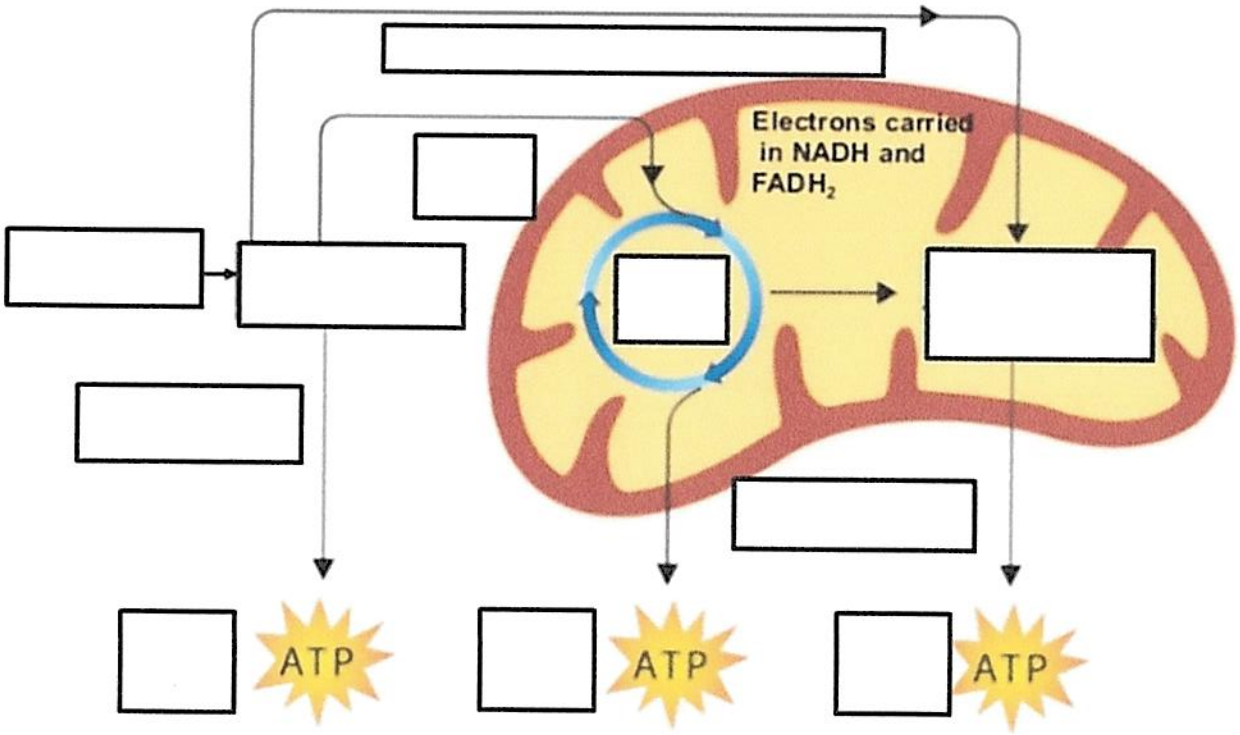
A: _____ created previously is passed to the ETC where the high energy _____ they carry moves through carrier _____ along the ETC eventually combining with _____ to form _____.

B: While on their journey, the _____ pump H^+ ions from inside the membrane out, making a _____ gradient.



C: ATP _____ pumps H^+ ions across the membrane causing it to _____ and collect an _____ charging it into _____.

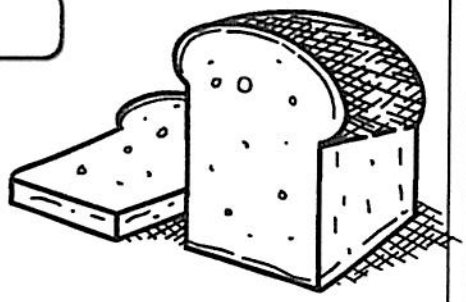
Diagram & ATP Totals:



FERMENTATION

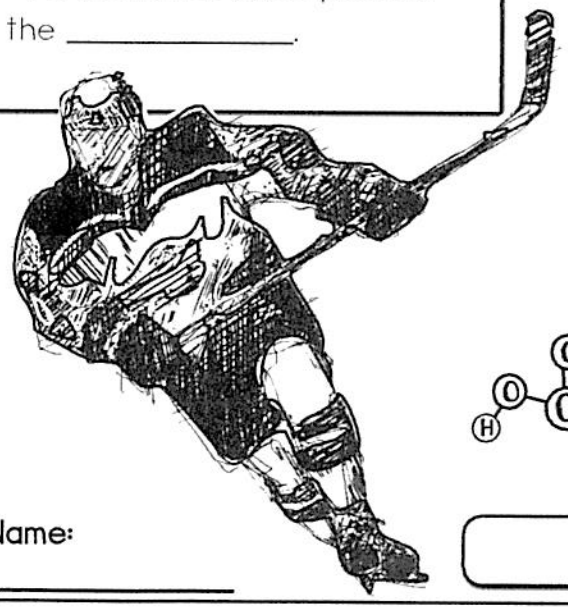
When yeast cells run low on oxygen

- _____ and _____ are made during fermentation in _____ cells
- _____ is oxidized to form _____.
- Bread rises when yeast inside the bread produces _____.



Why cells need fermentation when oxygen is low?

- _____ can be performed without _____.
- Cells need _____ so that they can continue to perform _____.
- Without _____, cells need a way to oxidize _____ to form NAD+.
- Fermentation takes place in the _____.



When human cells (like muscles) run low on oxygen

- _____is made during fermentation in human _____cells.
- NADH is oxidized to form _____.
- Lactic acid can build up in muscles and cause _____.
- Lactic acid is transported by the _____ to the _____ and can be converted into _____.

Name: _____