MY Respiration

COMIC

By: ELIJAH J. DASIL
Welcome to glycolysis. You can split your body in half. I can magically change your form, so can the others.

Glycolysis: breaks down glucose and produces 2 pyruvic acid, 2 net ATP, and 4 ATP.
- this all happens in the cytoplasm.

Energy investment phase

Next = Kreb cycle

Cellular Respiration:
- glycolysis
- Kreb cycle
- electron transport chain (Oxidative phosphorylation)

You are going to blow off some smoke. And become the sweetest person you'll ever be.

You'll only eat these bars.

Carbon Fixation: The plants by which photosynthesis creates its organic compounds.

Closed to you. The leaves...

General chloroplast...
Entering the Mitochondria specifically the MATRIX

x2 Pyruvic acid (3 carbon atoms)

before the Kreb cycle begins, the 3 carbon atoms split up and combine with an enzyme known as CoA. The product of the reaction is Acetyl CoA (2 carbon atom)

The Kreb cycle: happens in the Mitochondrial matrix

- citric acid
- $\text{Acetyl CoA becomes } \text{Citric acid}$
- $\text{NAD}^+ \text{ and FAD}^+$
- $\text{ADP}$

Kreb cycle into reactants:
- pyruvic acid becomes Acetyl CoA becomes citric acid
- $\text{NAD}^+ \text{ and FAD}^+$
- $\text{ADP}$

Kreb cycle products:
- $\text{CO}_2$
- $\text{NADH and FADH}_2$
- 2 net ATP

Summary: 8 steps of chemical reactions where 2 pyruvate molecules from glycolysis are chemically converted in this cycle to make 2 ATP and some 8NADH and 2 FADH2 releases carbon dioxide as a waste product.

The Kreb cycle is aerobic (requires oxygen)

The electron transport chain:
- occurs in the inner membrane of the mitochondria specifically the Cristae.
- reactants
  - NADH
  - $\text{FADH}_2$
  - $\text{O}_2$
- product
  - $\text{NAD}^+$
  - $\text{H}_2\text{O}$
  - 34 ATP

Summary:
- Don't have enough space, Go to next page.

The electron transport chain:
- occurs in the inner membrane of the mitochondria specifically the Cristae.
Summary of the Electron transport Chain
- two stages
  1. Oxidative phosphorylation
  2. Chemiosmosis
- process
  - series of reactions using the electrons and hydrogens carried by NADH and FADH₂
- In the end, electrons combine with H⁺ ions and oxygen to form water.
- Creating 34 trickin' ATP!

In the end of aerobic respiration
36 - 38 ATP
- 2 ATP from glycolysis
- 2 ATP from Kreb cycle
- 34 ATP from electron transport chain

Conference Room

creator: now the cycle will restart

creator: Let us go at it AGAIN!
characters: What!?

we must break the creator's pencil!
who is with me!

MY one and only sharp pencil! NOOOOO!

creator: thanks for reminding me.

creator: Elijah J. Dasil

THE END