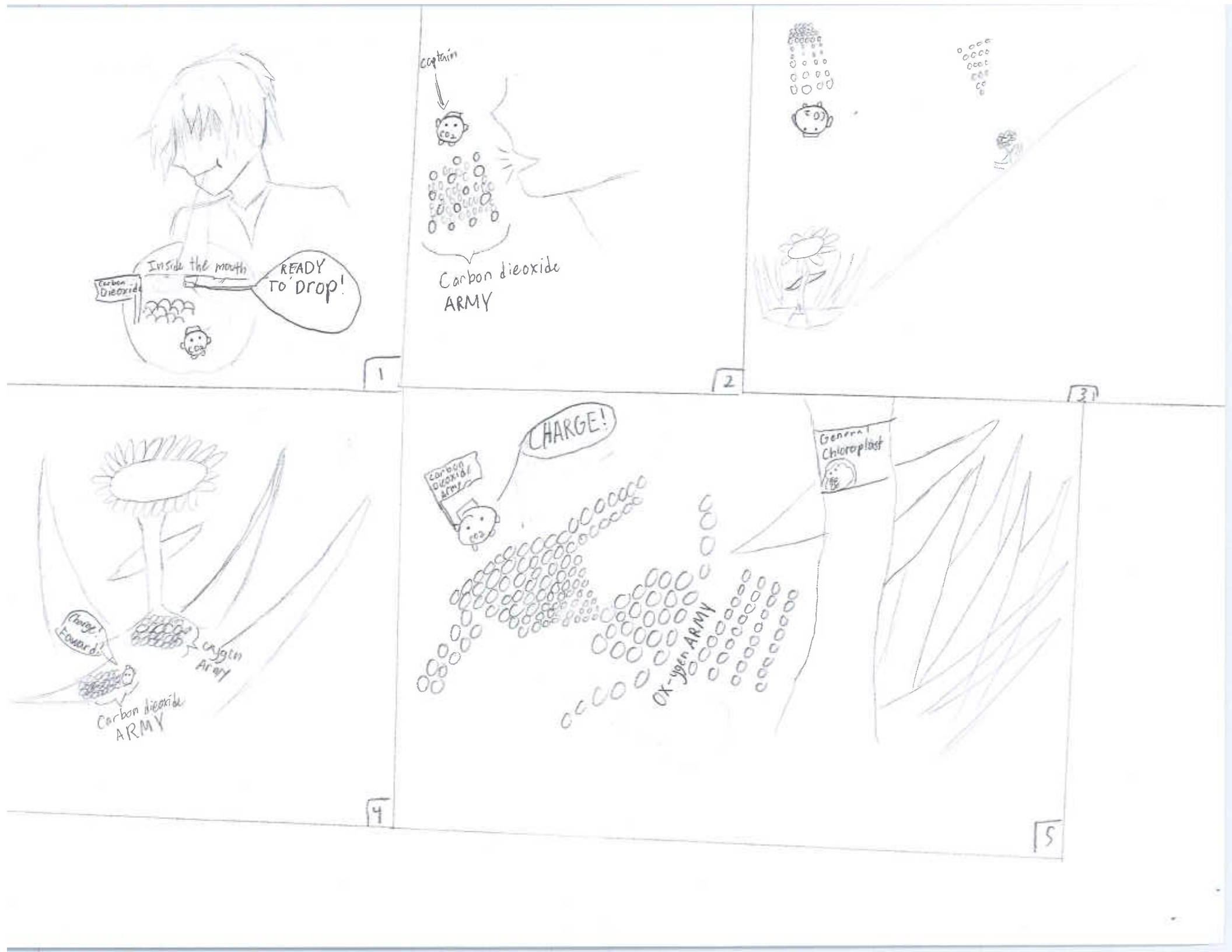
Cellular

MY Respiration

COMIC

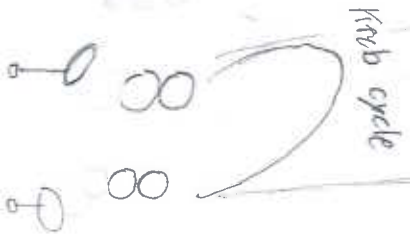
By: ELIJAH J. DASIL


Inside the mouth
READY TO Drop!
Carbon Dioxide
1
captain
Carbon dioxide ARMY
2
3
Charge! Forward!
Oxygen Army
Carbon dioxide ARMY
4
CHARGE!
Carbon Dioxide Army
OX-ygen ARMY
General Chloroplast
5

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

Entering the Mitochondria specifically the MATRIX

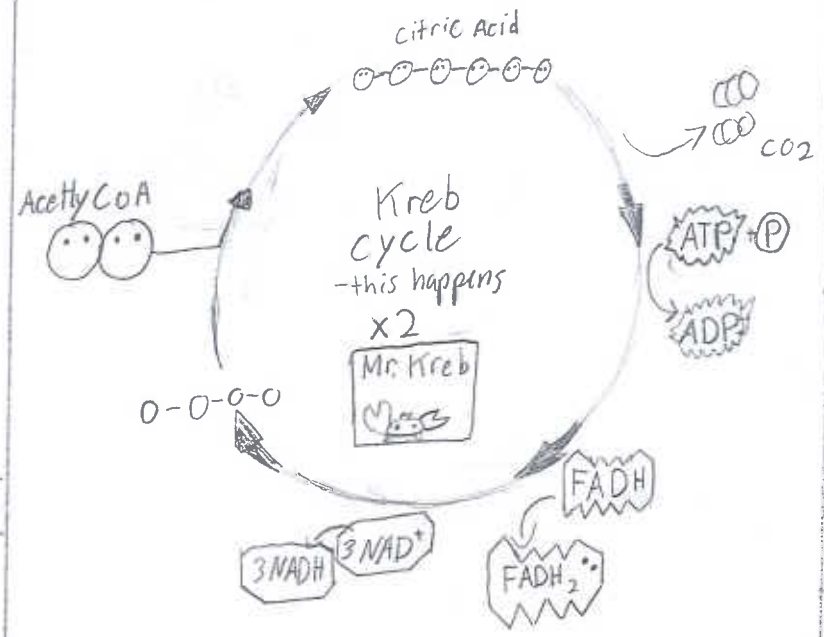
x2 Pyruvic acid (3 carbon atoms)



before the Krebs 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)

15

The Krebs cycle: happens in the Mitochondrial matrix



16

Krebs cycle info:

reactants:
- pyruvic acid becomes Acetyl CoA becomes citric acid
- NAD^+ and FAD^+
- ADP

products:
- CO_2
- NADH and $FADH_2$
- 2 net ATP

17

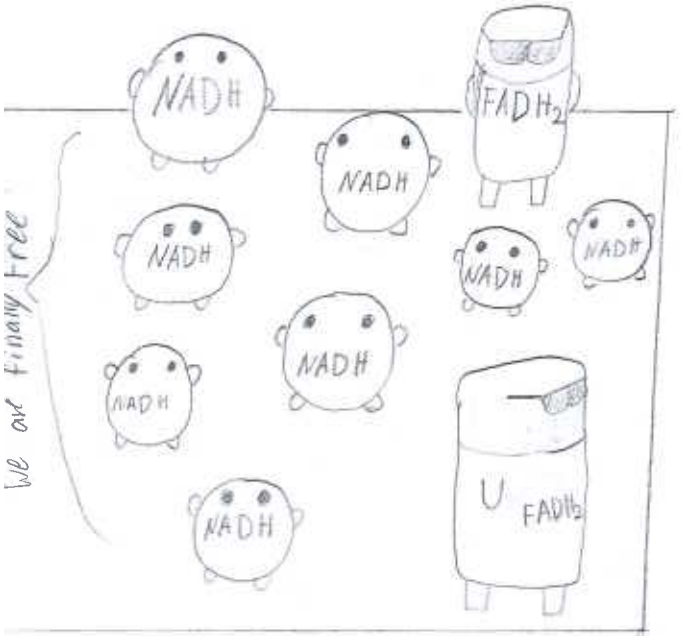
- summary: 8-steps of chemical reactions where 2 pyruvate molecules from glycolysis are chemically converted in this cycle to make 2 ATP (and some 8 NADH and 2 $FADH_2$
- releases carbon dioxide as a waste product

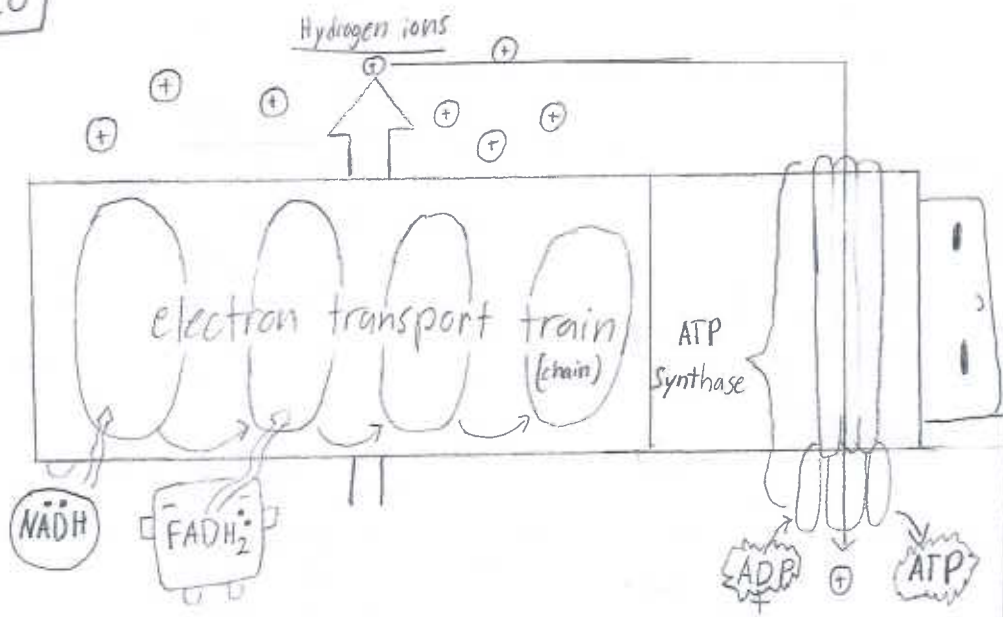
18

The Krebs cycle is Aerobic (requires oxygen)

19

20





The electron transport chain:

- occurs in the inner membrane of the mitochondria, specifically the Cristae.
- reactants
  - NADH
  - $FADH_2$
  - O_2
- product
  - NAD^+
  - H_2O
  - 34 ATP!

21

- summary

Don't have enough space. GO to next page.

Summary of the Electron transport chain

- two stages:
  1. Oxidative phosphorylation
  2. Chemiosmosis

22

- process
  - series of reactions using the electrons and hydrogens carried by NADH and $FADH_2$

- In the end, electrons combine with H^+ ions and oxygen to form water.

23

- creating 34 frickin' ATP!

24

In the end of Aerobic respiration

36 -38 ATP

- 2 ATP from glycolysis
- 2 ATP from Kreb cycle
- 34 ATP from electron transport chain

25

creator: now the cycle will restart

26

27

creator: Let us go at it

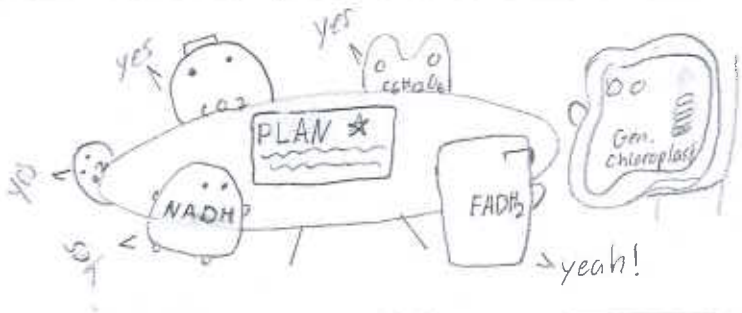
AGAIN!

characters: What!?

28

Conference ROOM

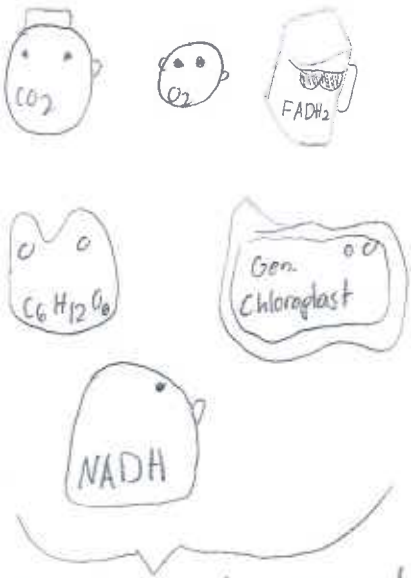
29



we must break the creator's pencil!

Who is with me!

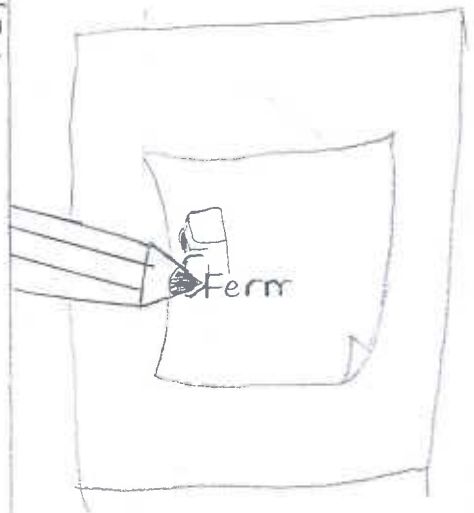
30



What a bout fermentation?

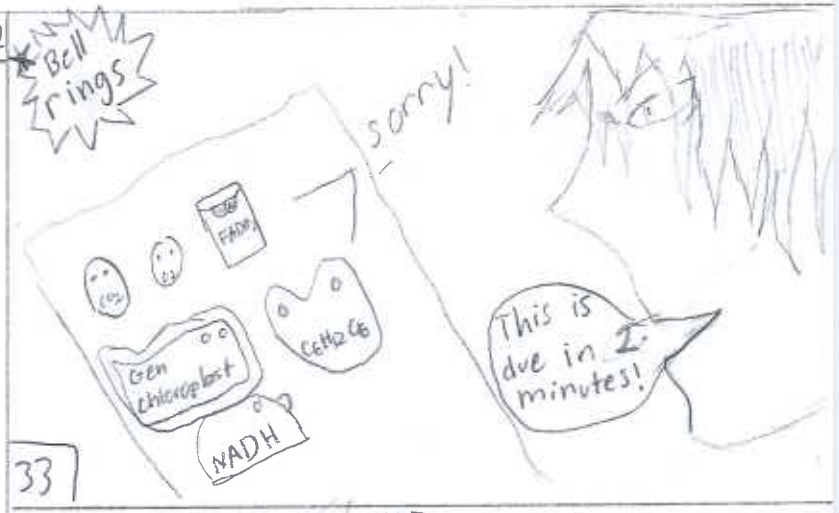
creator: thanks for reminding me.

31

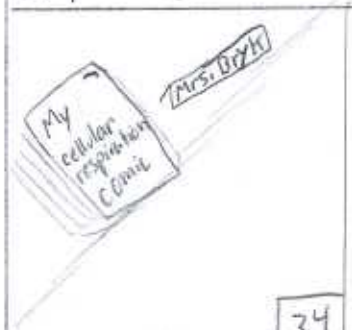


MY one and only sharp pencil! NOOOO!

32



33



34

THE END

creator: Elijah J. Dasil

35