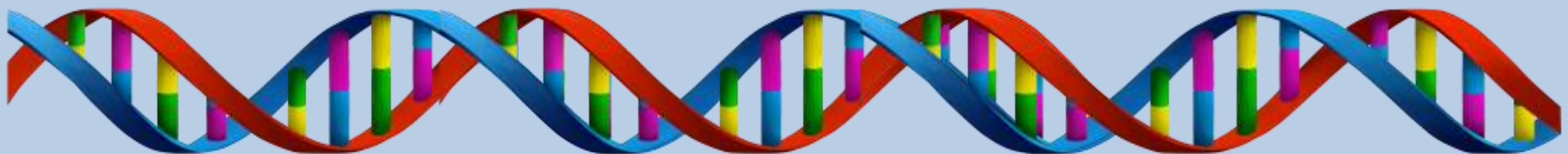


- 1. How do fish affect the pH of water?**
- 2. What gives energy to start the light independent reactions?**
- 3. If a plant does not have chloroplasts, what can't it make; light energy or chemical energy?**
- 4. What is the chemical formula of glucose?**



Logistics

- **Unit 4 Assessment is on Thursday
January 16th**
- **Chapters 8, 9, and 10**

Logistics

- Finals start January 21
- **START STUDYING NOW**

SUN	MON	TUE	WED	THU	FRI	SAT	
[Blacked out]						10	11
12	13	14	15	16 UNIT 4 TEST	17	18	
19	[Blacked out]	21 7	22 5/6	23 3/4	24 1/2	25	
26	[Blacked out]	28	29	30	31		

Logistics

- **Spinach Lab and Leaf Labs are due TODAY**

Logistics

- **Get out Photosynthesis and Cellular Respiration virtual lab**

Photosynthesis

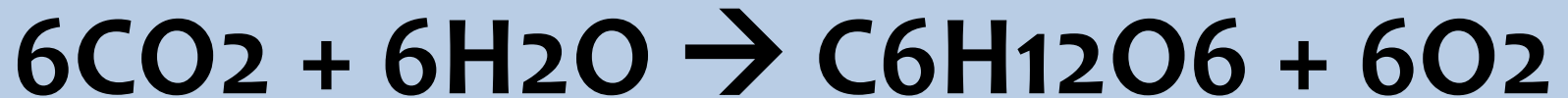
- **Open your notebooks to page 46**
- **Yes, I know that 45 is blank. We will go back to that later. Trust me.**

Photosynthesis

- **What is the formula of photosynthesis?**

Photosynthesis

- What is the formula of photosynthesis?

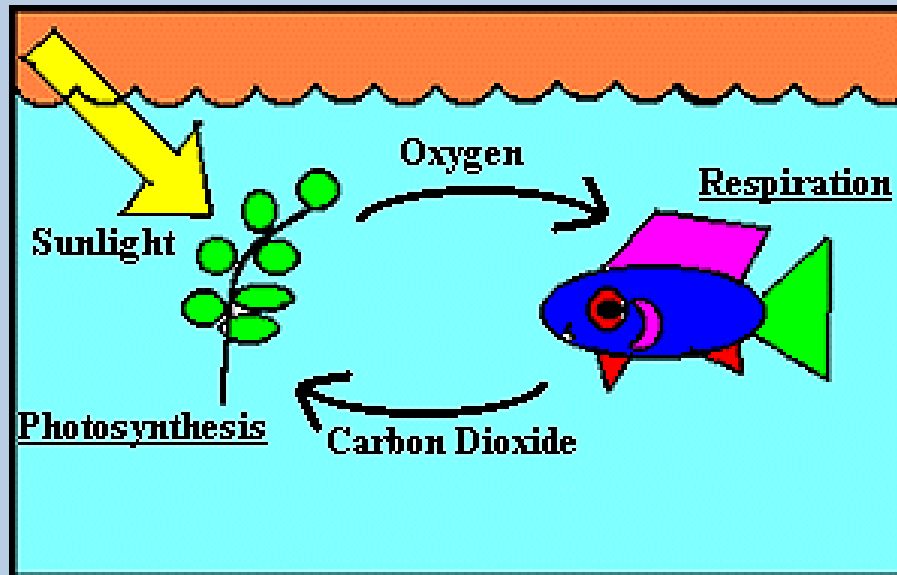


Cellular Respiration

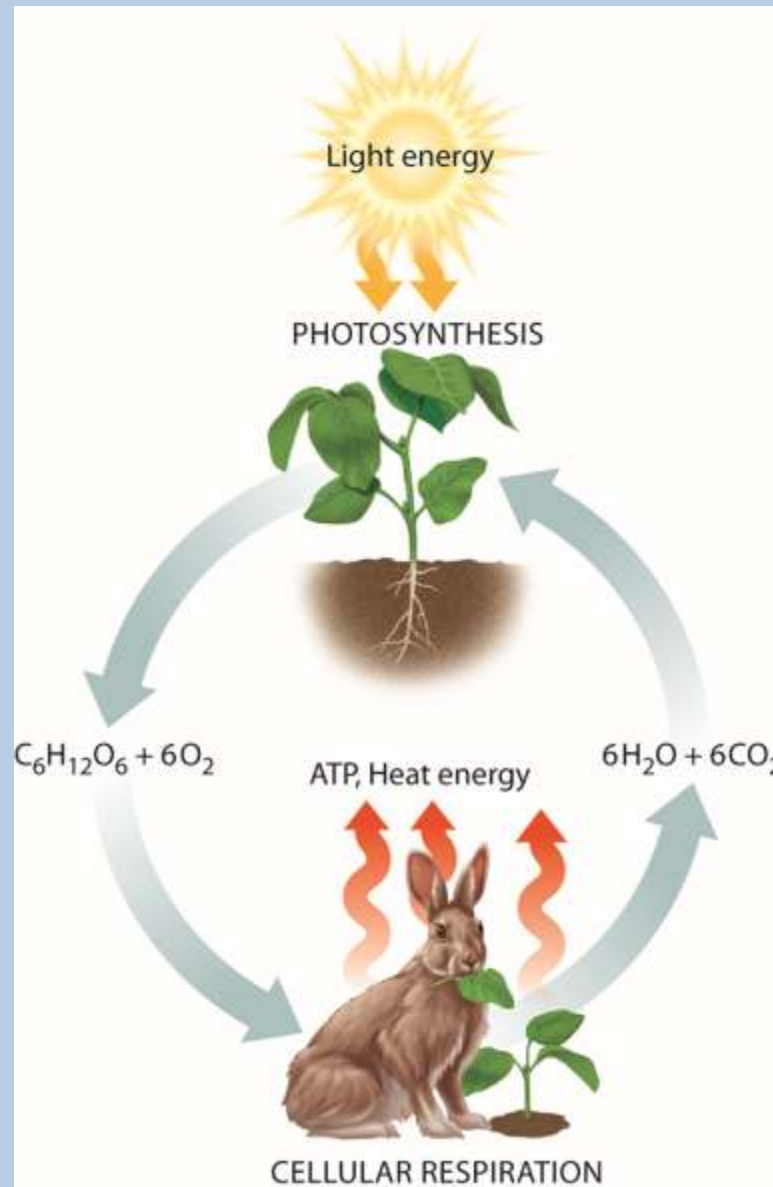
- **What was the cycle from the activity yesterday?**

Cellular Respiration

- What was the cycle from the activity yesterday?



Cellular Respiration

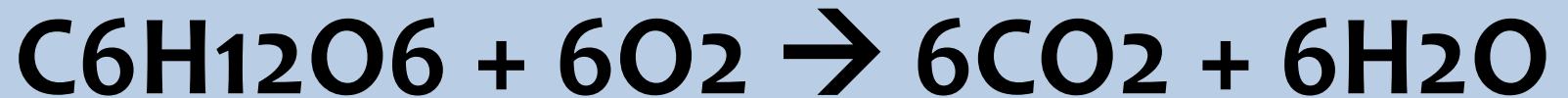


Cellular Respiration

- **What is the formula for cellular respiration?**

Cellular Respiration

- What is the formula for cellular respiration?

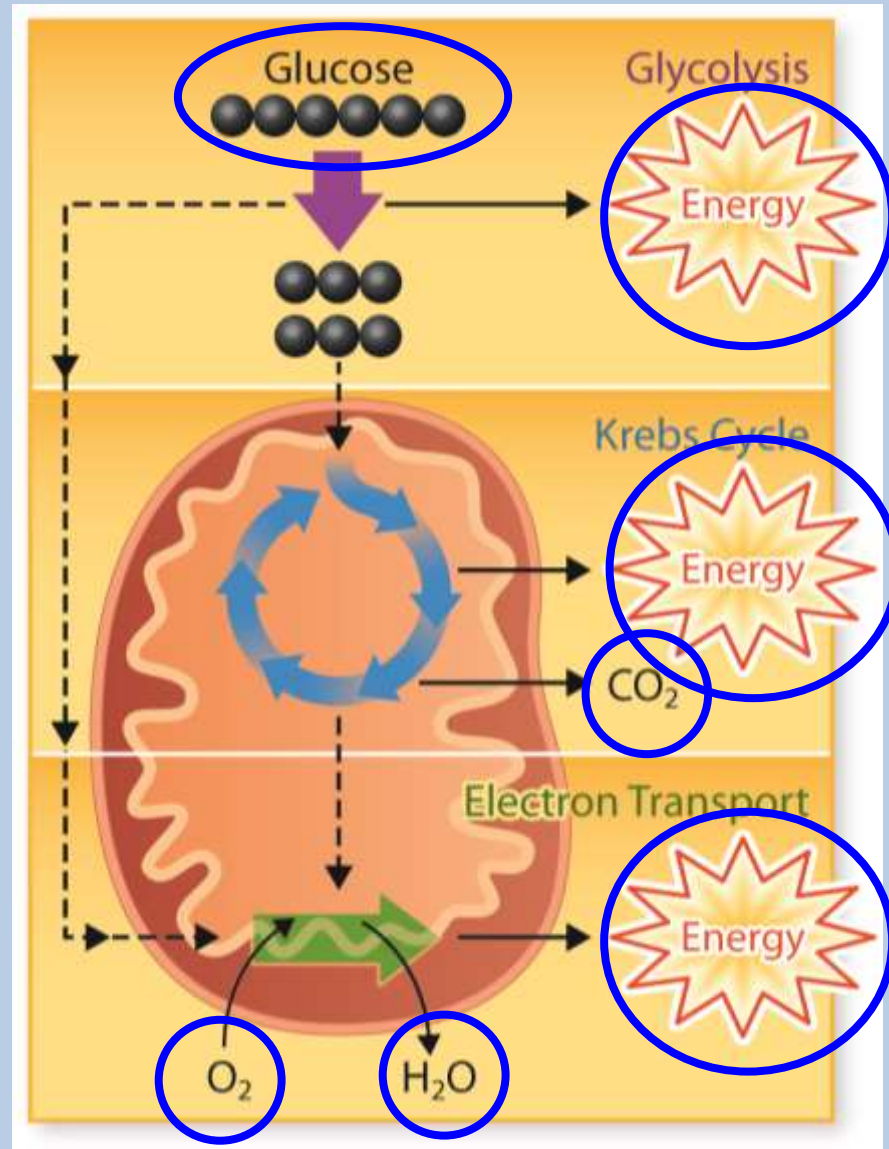


Cellular Respiration

- It happens in the mitochondria
- The goal is to make ATP (usable energy)

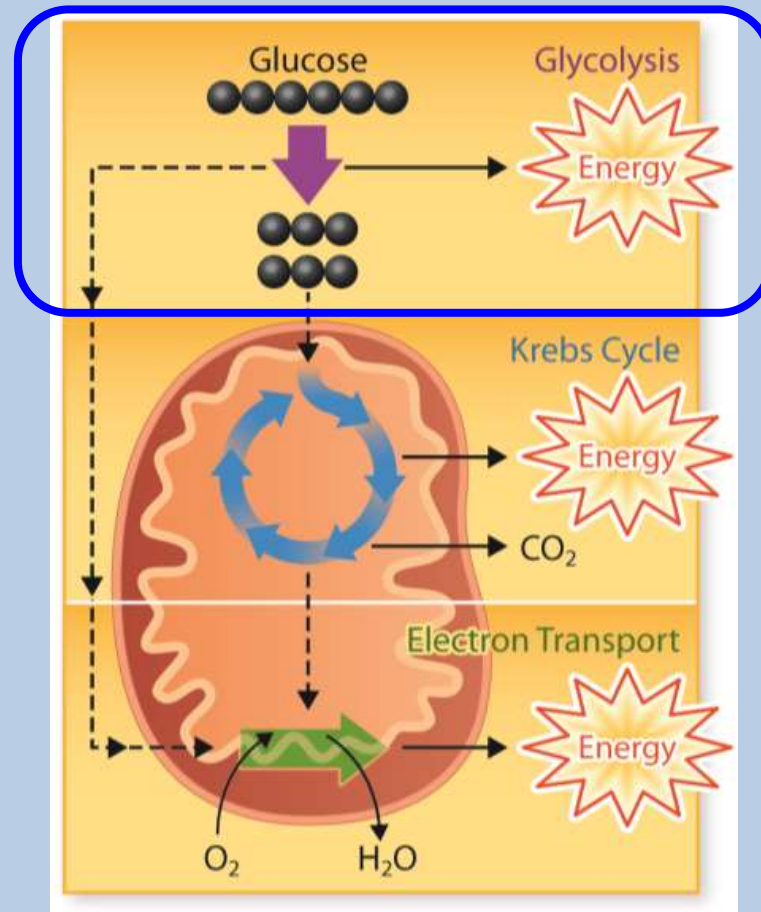
Stages of Cellular Respiration

1. Glycolysis
2. Krebs cycle
3. Electron transport chain



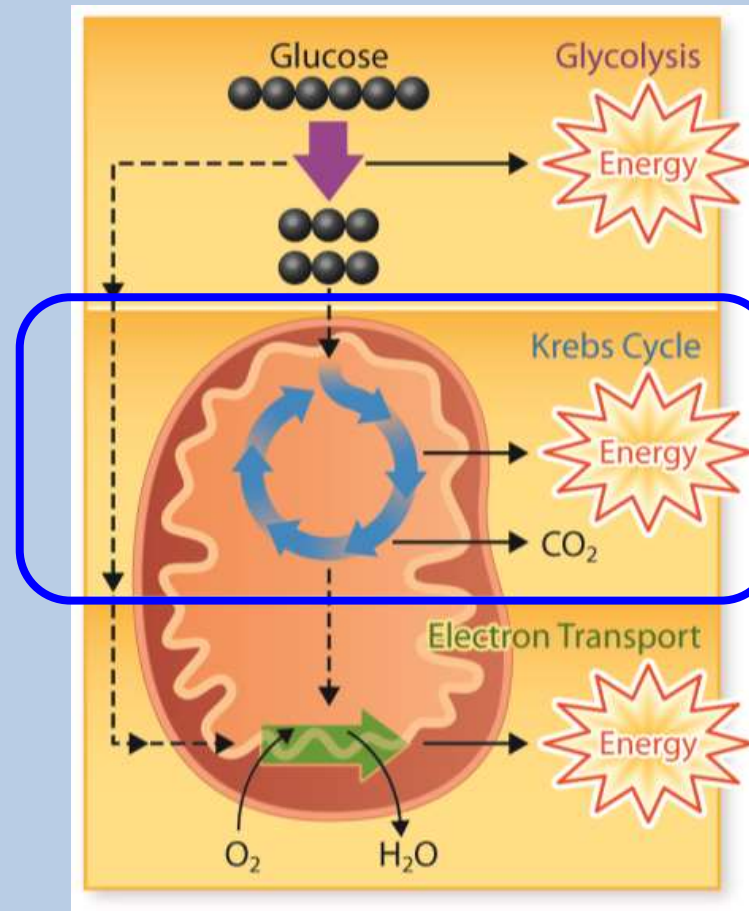
Stage 1: Glycolysis

- Glucose is broken into pyruvic acid in the cytoplasm, small amount of energy is captured to produce ATP, and electron carriers are made



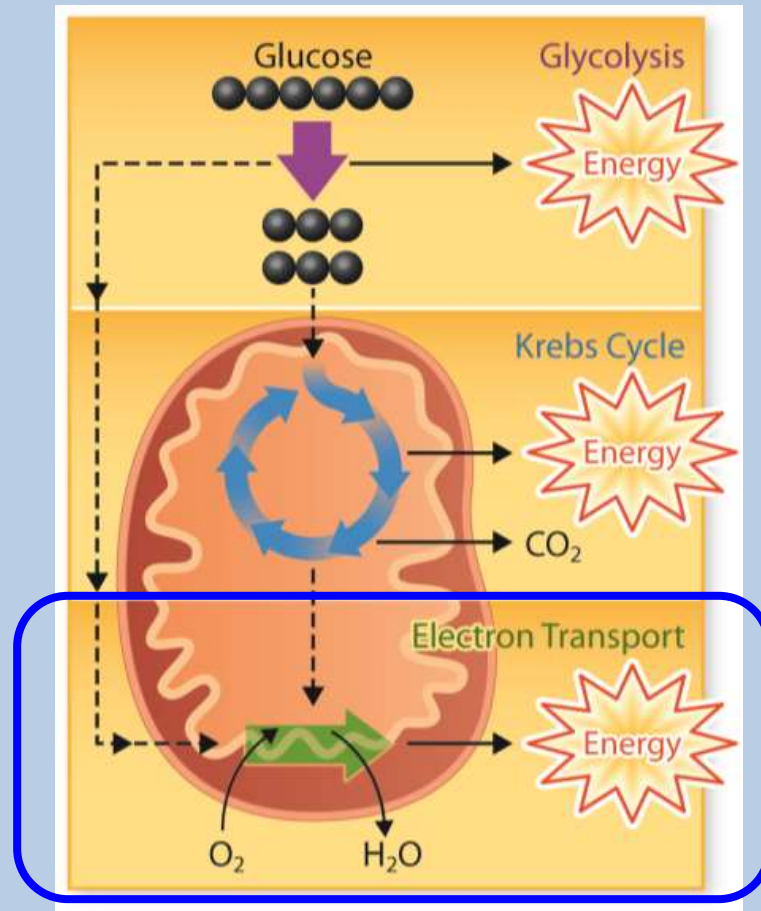
Stage 2: Krebs Cycle

- Pyruvic acid is broken down into CO_2 , 2 more ATP are produced, along with more electron carriers



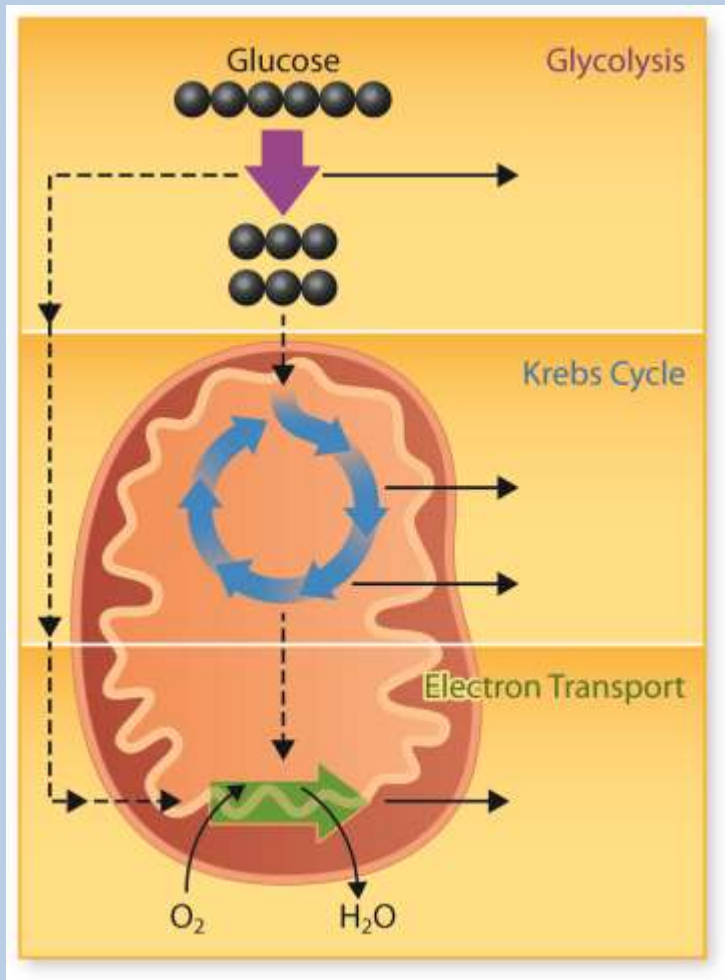
Stage 3: Electron Transport

- Electron carriers drop off electrons, more ATP is produced, oxygen accepts used electrons and becomes water



Total ATP from Cellular Respiration

- Glycolysis, the Krebs cycle, and the electron transport chain release up to 32 molecules of ATP per molecule of glucose



2



2



CO_2

28



Total ATP?

Up to 32

Anaerobic Respiration

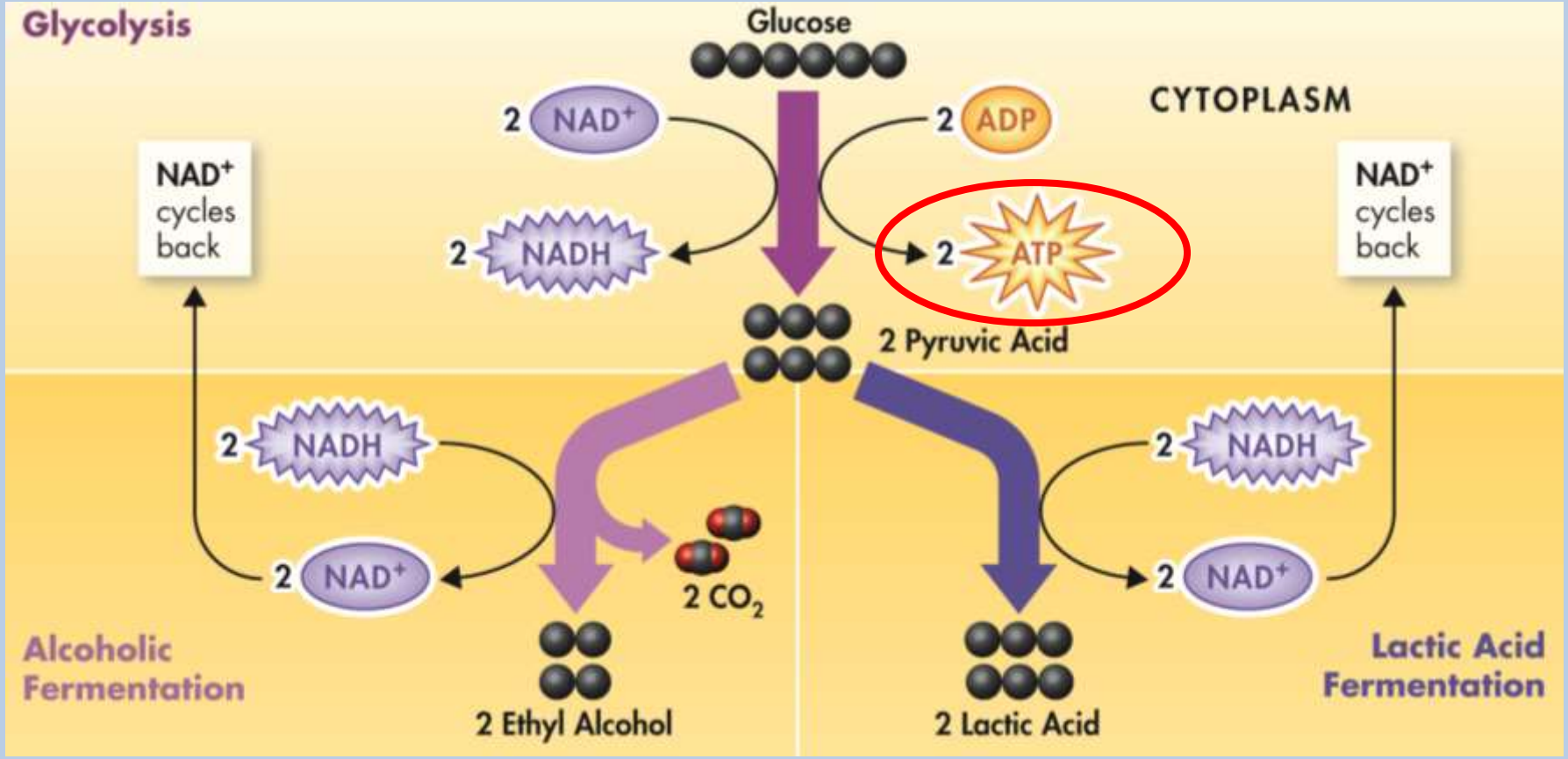
- **Sometimes oxygen is not available for cellular respiration to occur**

Respiration

- **Video from chapter 10 of Pearson**

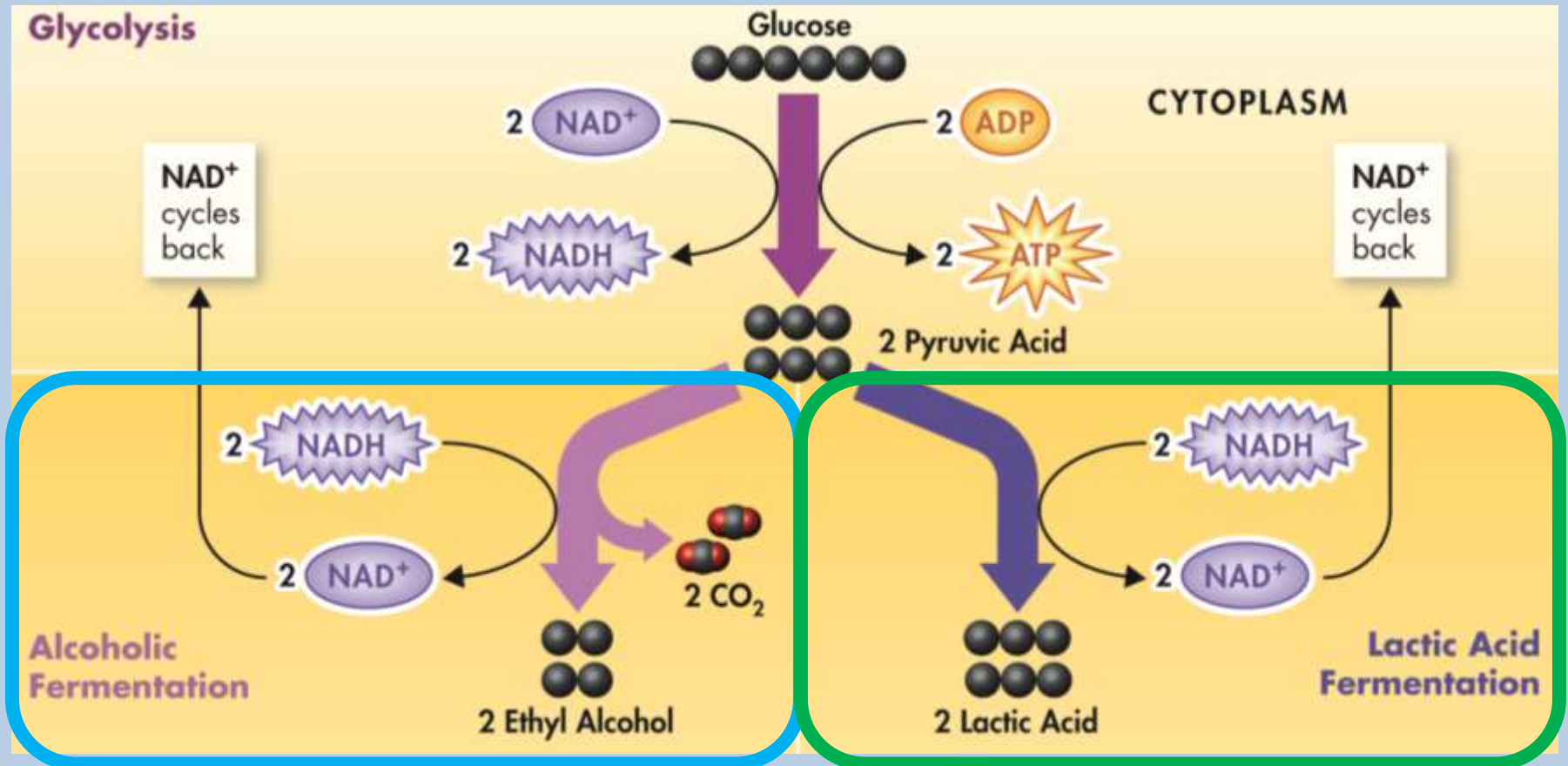
Fermentation

- In the absence of oxygen fermentation produces ATP



Fermentation

- Two Kinds:
 1. Alcoholic fermentation
 2. Lactic acid fermentation

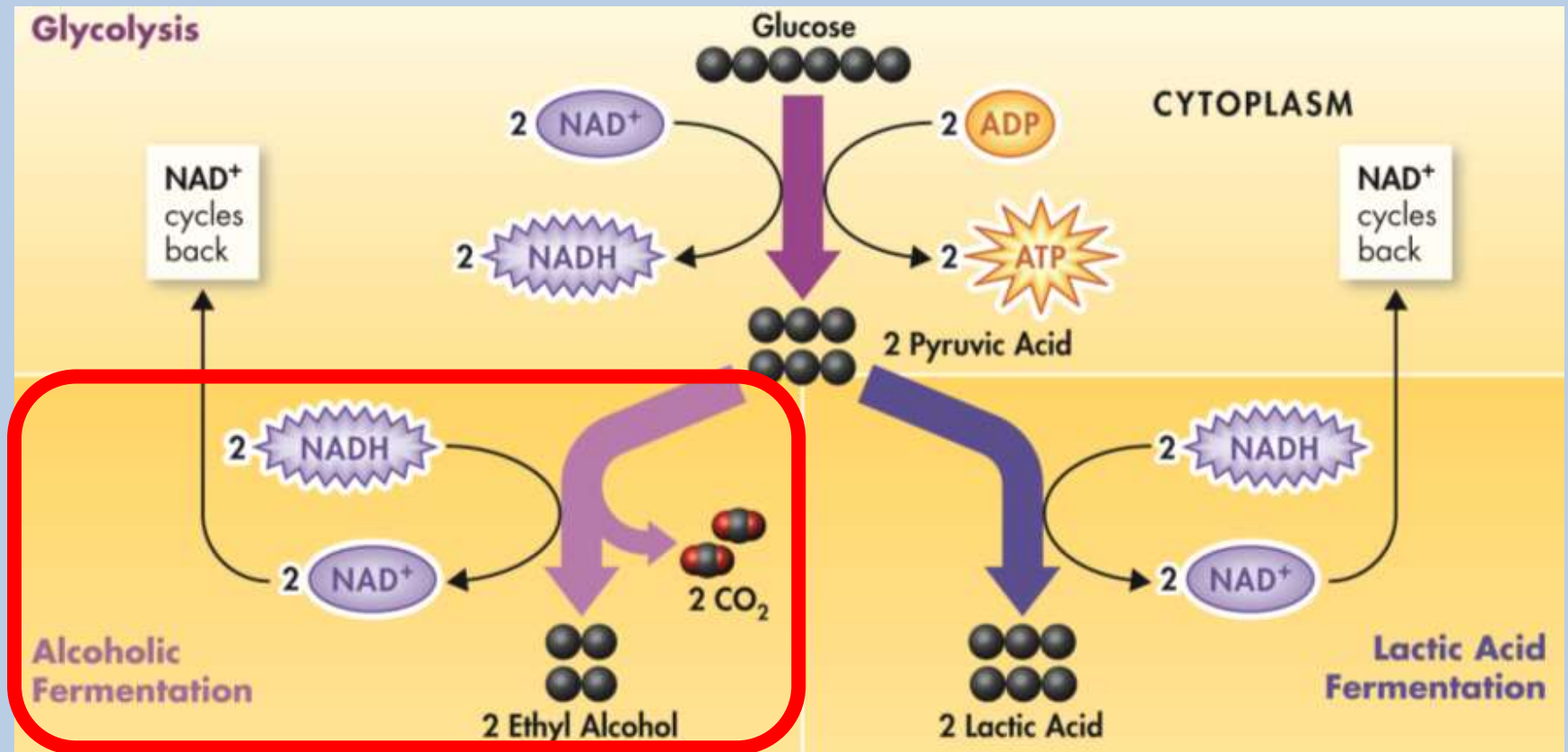
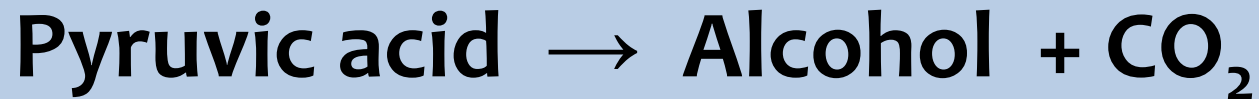


Alcoholic Fermentation



Alcoholic Fermentation

- Performed by yeasts and a few other microorganisms



Lactic Acid Fermentation



Lactic Acid Fermentation



Lactic Acid Fermentation

- Most organisms carry out lactic acid fermentation

Pyruvic acid \rightarrow Lactic Acid

