

Cellular Respiration



تم تحميل هذا الملف من موقع المناهج الإماراتية

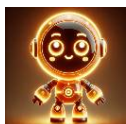
موقع المناهج ← المناهج الإماراتية ← الصف الحادي عشر العام ← علوم ← الفصل الثالث ← ملفات متنوعة ← الملف

تاريخ إضافة الملف على موقع المناهج: 22:30:30 2026-07-01

ملفات اكتب للمعلم اكتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل
منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي للمدرس

المزيد من مادة
علوم:

التواصل الاجتماعي بحسب الصف الحادي عشر العام



صفحة المناهج
الإماراتية على
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

المزيد من الملفات بحسب الصف الحادي عشر العام والمادة علوم في الفصل الثالث

الدرس الثاني البناء الضوئي الجزء الثاني

1

الدرس الثاني البناء الضوئي

2

How organisms obtain energy

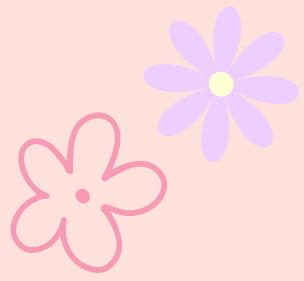
3

كن مستعدا مراجعة نهاية الفصل 2026م غير محلول

4

مراجعة وفق الهيكل الوزاري منهج انسباير المسار M مع الإجابات

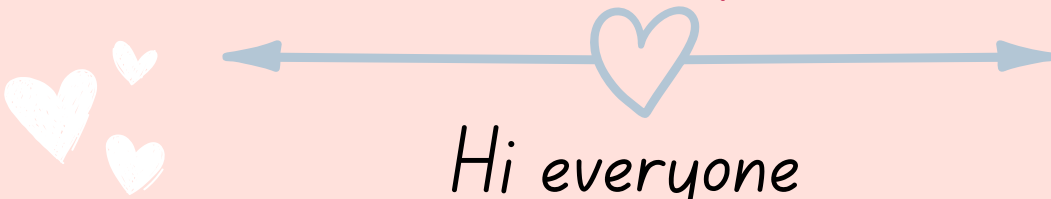
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Biology- II ADV

LESSON-3

Cellular respiration



Hi everyone

I made this file to help you in your study

Hope its helpful!

Thanks for reading



Done By:



Cellular respiration

Cellular respiration begins with glycolysis, a process in which glucose is broken down into pyruvate.

Anaerobic process, meaning it does not need oxygen

Aerobic processes, which require the presence of oxygen.

Glycolysis

1- During glycolysis, in the cytoplasm, two phosphate groups are joined to glucose, using two molecules of ATP.

2- The 6-carbon molecule is then broken down into two 3-carbon compounds.

3- Two phosphates are added, and electrons and protons combine with two NAD^+ molecules to form two NADH molecules.

4- The two 3-carbon molecules are changed into two molecules of pyruvate. Four molecules of ATP are made.

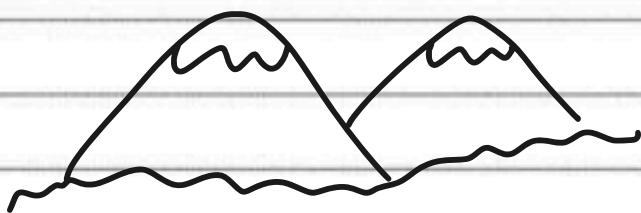
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Krebs Cycle

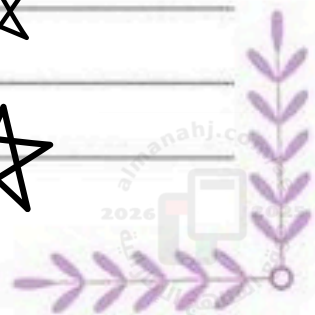
Next, the pyruvate, made during glycolysis, is transported into the mitochondria. There it is converted into carbon dioxide in a series of reactions called the Krebs cycle.

Krebs cycle

Before the pyruvate enters the Krebs cycle, it reacts with coenzyme A (CoA) to form a 2-carbon intermediate called acetyl CoA. Carbon dioxide is released, and NAD^+ is changed to NADH. Acetyl CoA then moves to the mitochondria, where it combines with a 4-carbon molecule to form citric acid. Citric acid is then broken down, releasing two molecules of carbon dioxide and making one ATP, three NADH, and one FADH_2 . Acetyl CoA and citric acid are made, and the cycle continues. Two pyruvate molecules are made during glycolysis, resulting in two turns of the Krebs cycle for each glucose molecule.



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Electron transport

1-the final stage of cellular respiration

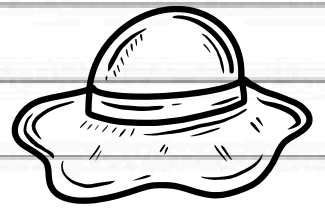
2-takes place in the mitochondria

3-The high-energy electrons and protons from NADH and FADH₂ are used to change ADP to ATP.

4-Electrons and protons are released from NADH and FADH₂ into the mitochondria.

5-Protons and electrons are transferred to oxygen to make water

6-Electron transport makes 32 ATP molecules.



Do prokaryotes use cellular respiration?

Some prokaryotes also undergo aerobic respiration. Since they have no mitochondria, electron transport occurs in the cellular membrane instead.

Prokaryotes make 38 molecules of ATP from one molecule of glucose.

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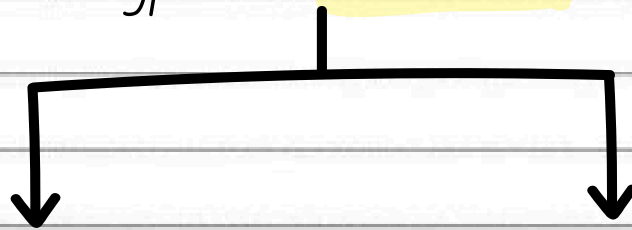
♥♥ Anaerobic Respiration ☆☆

Anaerobic respiration takes place when oxygen is low. Some prokaryotes that do not need oxygen use anaerobic respiration all the time. Other cells use anaerobic respiration when oxygen levels are low.

How is ATP made during anaerobic respiration?

Anaerobic respiration, or **fermentation**, follows glycolysis when oxygen is absent. Glycolysis makes two ATP from each glucose molecule.

types of **fermentation**

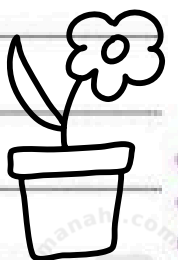


lactic-acid fermentation

- 1- use pyruvate to make lactic acid
- 2- takes place in skeletal muscle cells
- 3- is used to make foods like cheese, yogurt, and sour cream.

alcohol fermentation

- 1- use pyruvate to make ethyl alcohol and carbon dioxide.
- 2- used to make Yeast and some bacteria.



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