

How organisms obtain energy



تم تحميل هذا الملف من موقع المناهج الإماراتية

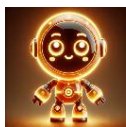
موقع المناهج ← المناهج الإماراتية ← الصف الحادي عشر العام ← علوم ← الفصل الثالث ← ملفات متنوعة ← الملف

تاريخ إضافة الملف على موقع المناهج: 08:05:27 2026-07-08

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

ملخص وحدة الطاقة الخلوية

1

مراجعة أسئلة سنوات سابقة

2

The Immune System Worksheet KEY

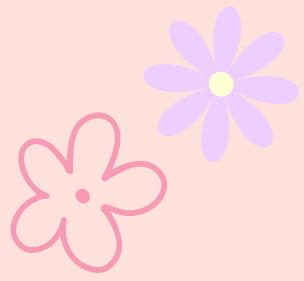
3

The Immune System

4

Noninfectious Disorders

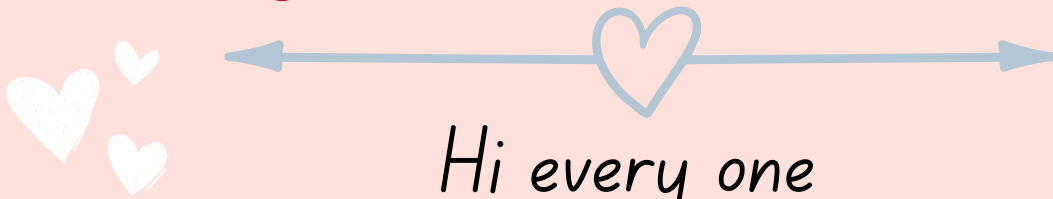
5



Biology- II ADV

LESSON-I

How organisms obtain energy?



Hi every one

I made this file to help you in your study

Hope its helpful!

Thanks for reading



Done By:

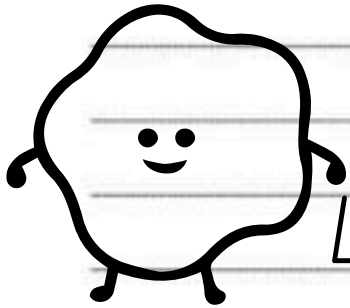


How organisms obtain energy?

Transformation of energy:

Energy: the ability to do work

Thermodynamics: The study of the flow of transformation of energy in the universe



Laws of Thermodynamics :

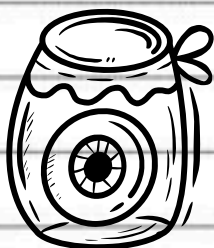


1- Law of conservation of energy

- state that energy cant be created or destroyed

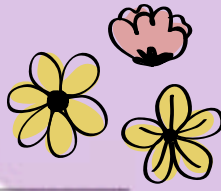
2- Energy cant be converted without the loos of usable energy

- state that energy cant be created or destroyed

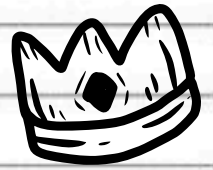
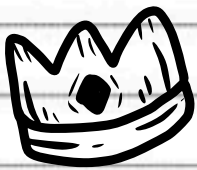


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How organisms obtain energy?



How organisms take energy?



heterotrophs

تعتمد على غيرها

Autotrophs

تصنع غذائها بنفسها



Metabolism:

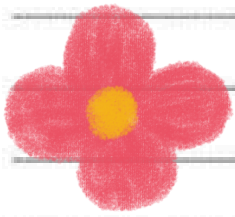
Defined as: All the chemical reactions in the cell.



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How organisms obtain energy?



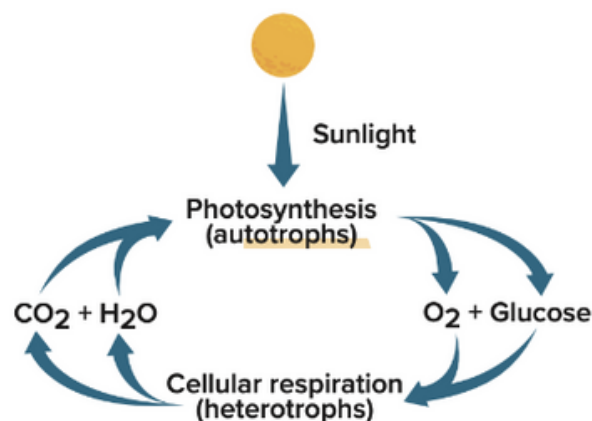
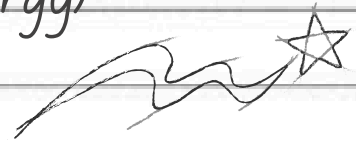
The two metabolic pathways:

Anabolic pathway: building up larger molecules (sugars) from smaller ones (CO_2 and water) (using energy)

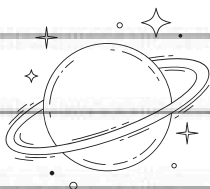
eg photosynthesis

Catabolic pathway: breakdown of large molecules (sugars) into smaller ones (CO_2 and water) (release energy)

eg cellular respiration



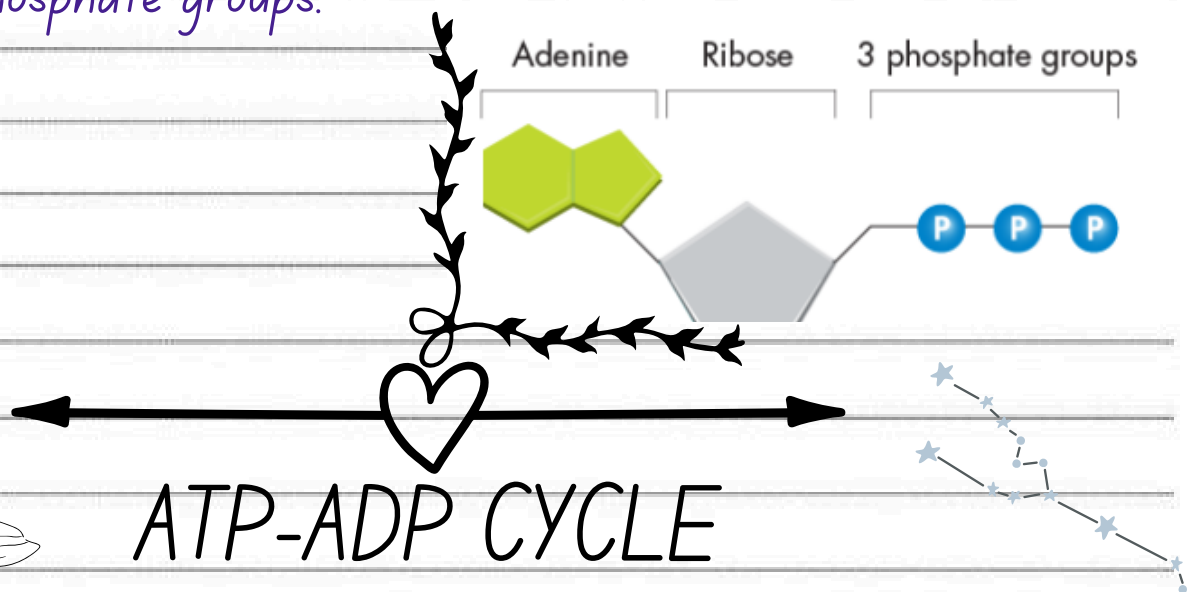
- Photosynthesis is a process where light energy is used to convert carbon dioxide and water into sugars and oxygen
- This stored chemical energy in sugars is passed on to other organisms when they consume these molecules as food.
- Photosynthesis is a process where light energy is used to convert carbon dioxide and water into sugars and oxygen. This stored chemical energy in sugars is passed on to other organisms when they consume these molecules as food.
- This process produces carbon dioxide and water as byproducts.



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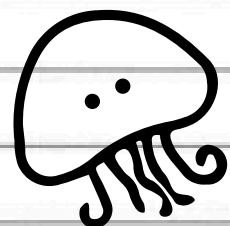
ATP and ADP

- One of the most important compounds that cells use to store and release energy is adenosine triphosphate (ATP)
- ATP consists of adenine, a 5-carbon sugar called ribose, and three phosphate groups.

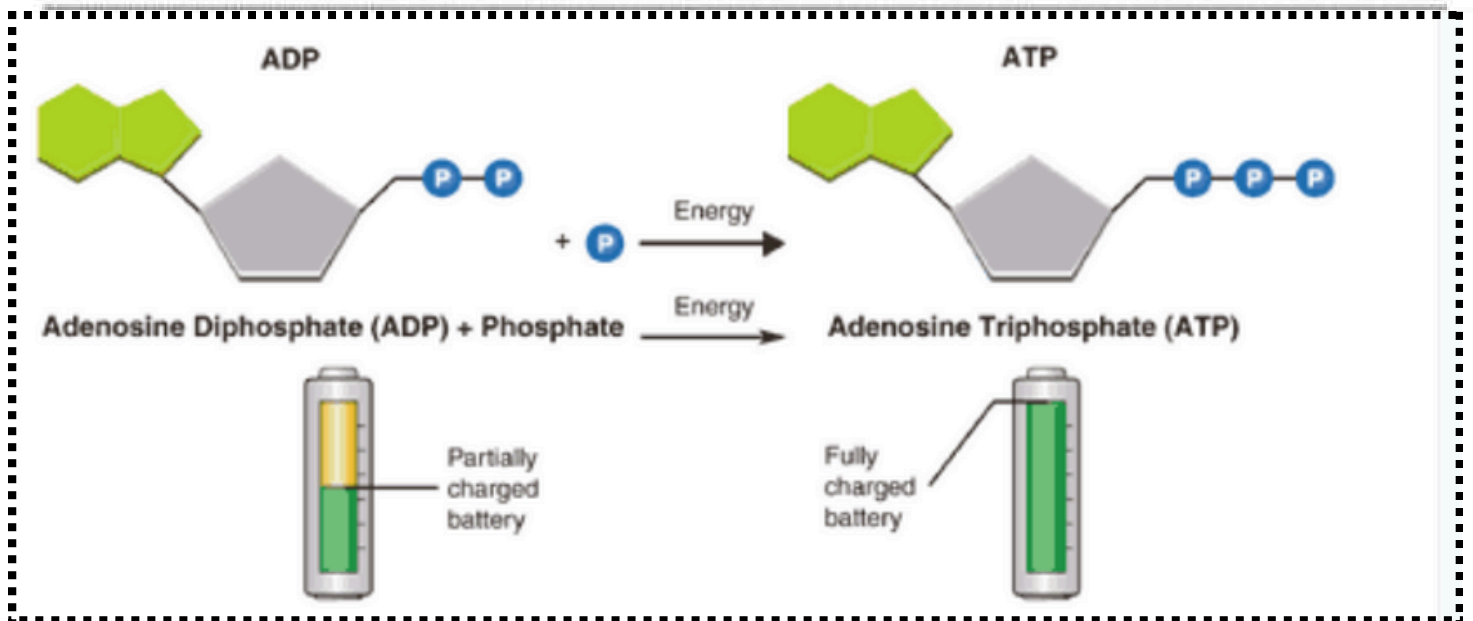


- Adenosine diphosphate (ADP) looks almost like ATP, except that it has two phosphate groups instead of three. ADP contains some energy, but not as much as ATP.
- When a cell has energy available, it can store small amounts of it by adding phosphate groups to ADP, producing ATP.
- Cells can release the energy stored in ATP by breaking the bonds between the second and third phosphate groups.

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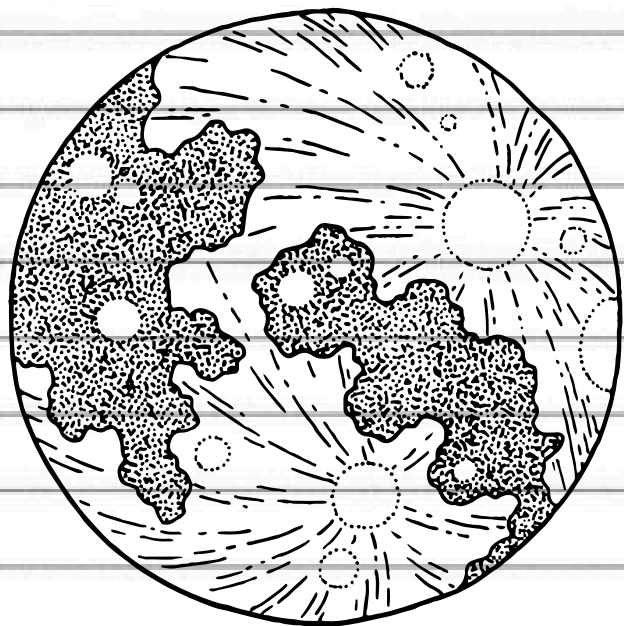
ATP-ADP CYCLE



ATP is used in many biological processes in living organisms

These Include :

- Cell division
- Muscle activity
- Digestion
- Excretion



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