Cellular Respiration Notes

Definition

The process by which \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ molecules are broken down to release \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

is called cellular respiration.

All organisms need a source of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (ATP).

Heterotrophs use the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ compounds in food for energy sources.

 Before energy in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be used by cells, it must be broken

down into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ like glucose.

This breakdown of glucose is done by our \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.



Three Stages of Cellular Respiration

1. Glycolysis
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ splits into two
3. Lysis = to burst or break
4. Takes place in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Produces \_\_\_\_\_\_ ATP (energy molecules)
6. It actually makes \_\_\_\_\_\_\_\_ ATP, but it uses \_\_\_\_\_\_ ATP.
7. \_\_\_\_\_\_\_\_ ATP -\_\_\_\_\_\_\_ ATP = \_\_\_\_\_\_\_ AT
8. Krebs Cycle
9. Also called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. Occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. Requires \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. The glucose, which was already split in \_\_\_\_\_\_\_\_, is broken down further to make \_\_\_\_\_\_\_\_\_\_.
13. The \_\_\_\_\_\_\_\_ is released into the atmosphere
14. Produces \_\_\_\_\_ ATP and high-energy electrons
15. These electrons are carried by electron carriers (\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_)

3. Electron Transport Chain

a. Occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. Requires \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. The high-energy electrons are passed down a chain of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. At the end of the chain, these electrons are combined with hydrogen and oxygen to form \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

e. This process makes \_\_\_\_\_\_\_\_ ATP from ADP



Anaerobic = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Ex. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Aerobic = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Ex. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Alcoholic Fermentation

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (single-celled fungi) and a few other microorganisms use alcoholic fermentation
* Forms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ as wastes

Glycolysis 🡪 CO2 + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_ATP

Lactic Acid Fermentation

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is produced in your muscles during rapid exercise when the body cannot supply enough \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the tissues

Without enough\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the body isn’t able to produce all the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that is required

Glycolysis 🡪 CO2 +\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_ATP



Main Points:

* 1. Photosynthesis and Respiration are a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* 2. The purpose of the cycle is to turn \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the sun into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that living organisms can use!!!!

|  |  |  |
| --- | --- | --- |
|  | **Photosynthesis** | **Respiration** |
| **Function** |  |  |
| **Location** |  |  |
| **Reactants** |  |  |
| **Products** |  | CO2 and H2O and energy (ATP) |

Photosynthesis:

Respiration: