

Edexcel Biology GCSE

Topics 8.9 to 8.10 - Respiration

Flashcards

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What is respiration?



What is respiration?

A process that releases energy in the form of ATP from the breakdown of organic compounds (e.g. glucose)



What is ATP?



What is ATP?

- Short term energy store in all cells
- Universal energy carrier



Why must respiration occur continuously in living cells?



Why must respiration occur continuously in living cells?

ATP is required for many essential processes in living cells e.g. movement, homeostasis and active transport.



What type of reaction is respiration?



What type of reaction is respiration?

It is an exothermic reaction that releases energy in the form of heat.



Where do plants get the glucose required for respiration?



Where do plants get the glucose required for respiration?

They produce their own glucose during photosynthesis.



Where do animals get the glucose required for respiration?



Where do animals get the glucose required for respiration?

From the breakdown of carbohydrates that they have ingested



What are the two types of respiration?



What are the two types of respiration?

- Aerobic respiration
- Anaerobic respiration



What is aerobic respiration?



What is aerobic respiration?

Respiration in the **presence of oxygen** that forms *ATP* from the breakdown of glucose



Write the word equation for aerobic
respiration



Write the word equation for aerobic respiration

glucose + oxygen \rightarrow carbon dioxide + water (+ATP)



Write the symbol equation for aerobic respiration



Write the symbol equation for aerobic respiration



What is anaerobic respiration?



What is anaerobic respiration?

Respiration that takes place **without oxygen** and forms ATP from the breakdown of glucose



When may anaerobic respiration take place in human cells?



When may anaerobic respiration take place in human cells?

During vigorous exercise



When may anaerobic respiration take place in plant cells?



When may anaerobic respiration take place in plant cells?

If the soil becomes waterlogged



Write the word equation for anaerobic respiration in muscle cells



Write the word equation for anaerobic respiration in muscle cells

glucose \rightarrow lactic acid (+ ATP)



Why may anaerobic respiration in muscle cells eventually stop?



Why may anaerobic respiration in muscle cells eventually stop?

Lactic acid build-up inhibits anaerobic respiration



What are the symptoms of lactic acid build-up?



What are the symptoms of lactic acid build-up?

Cramp and fatigue



Write the word equation for anaerobic respiration in plant and yeast cells



Write the word equation for anaerobic respiration in plant and yeast cells

glucose \rightarrow ethanol + carbon dioxide
(+ATP)



Is aerobic or anaerobic respiration more efficient? Explain why



Is aerobic or anaerobic respiration more efficient?
Explain why

Aerobic respiration is more efficient as it produces more molecules of ATP than anaerobic respiration.

