

Knowledge: Respiration

Respiration is a series of chemical reactions, in cells, that breaks down glucose to provide energy and form new molecules. Most living things use aerobic respiration but switch to anaerobic respiration

Knowledge : Respiration

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| 1 | Aerobic respiration: Breaking down glucose with oxygen to release energy and producing carbon dioxide and water |
| 2 | Anaerobic respiration (fermentation): Releasing energy from the breakdown of glucose without oxygen, producing lactic acid (in animals) and ethanol and carbon dioxide (in plants and microorganisms) |
| 3 | Fermentation is a type of anaerobic respiration which occurs in yeast, yeast produces ethanol, which is a type of alcohol |

Additional info:
Energy is needed for life processes such growth and repair, movement and to control body temperature

Aerobic - More efficient - produces more energy per glucose molecule
Anaerobic- Less efficient - produces less energy per glucose molecule

Knowledge: Photosynthesis

Photosynthesis is the process which occurs in the chloroplasts to produce glucose using sunlight – The rate of photosynthesis can be affected **by light intensity, carbon dioxide concentration and temperature**

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| 1 | It converts carbon dioxide and water into glucose and oxygen |
| 2 | It uses light energy to power the chemical reaction, which is absorbed by the green pigment chlorophyll |
| 3 | This means that photosynthesis is an example of an endothermic reaction (takes in energy) |
| 4 | Any organism that can use photosynthesis to produce its own food is known as a producer , these are not just limited to plants but can include other organisms such as algae |

Knowledge: key word equations

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| 1 | Photosynthesis: carbon dioxide + water → glucose + oxygen |
| 2 | Aerobic : glucose + oxygen → carbon dioxide + water |
| 3 | Anaerobic: glucose → lactic acid
Fermentation: glucose → ethanol + carbon dioxide |

Key Vocabulary - Respiration

1	Respiration	Is the chemical reaction which occurs inside the mitochondria
2	Aerobic	Breaking down glucose with oxygen
3	Anaerobic	Breaking down glucose without oxygen
4	Fermentation	In plants/yeast cells, anaerobic respiration makes different products. This is called fermentation.

Key Vocabulary - Photosynthesis

1	Fertilisers	Chemicals containing minerals that plants need to build new tissues
2	Photosynthesis	A process where plants and algae turn carbon dioxide and water into glucose and release oxygen.
3	Chlorophyll	Green pigment in plants and algae which absorbs light energy
4	Stomata	Pores in the bottom of a leaf which open and close to let gases in and out