

Respiration

State the seven uses of energy in living organisms.

Respiration

Why does respiration matter to every living cell?

Respiration

How can you measure the rate of respiration in yeast?

Respiration

Name two variables to control in the yeast temperature investigation.

Respiration

Define aerobic respiration.

Respiration

Word equation for aerobic respiration?

Respiration **Supplement**

Balanced chemical equation for aerobic respiration?

Respiration

Define anaerobic respiration.

It releases energy from nutrient molecules, which cells need for all their life processes.

Muscle contraction, protein synthesis, cell division, active transport, growth, nerve impulses, maintaining constant body temperature.

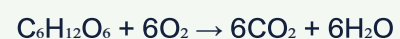
Any two: mass of yeast, volume and concentration of glucose solution, time, pH.

Count carbon dioxide bubbles in a fixed time, or measure the volume of gas collected.

glucose + oxygen → carbon dioxide + water

Chemical reactions in cells that use oxygen to break down nutrient molecules to release energy.

Chemical reactions in cells that break down nutrient molecules to release energy without using oxygen.



Respiration

Compare the energy released by anaerobic and aerobic respiration.

Respiration

Word equation for anaerobic respiration in yeast?

Respiration

Word equation for anaerobic respiration in muscles?

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Balanced equation for anaerobic respiration in yeast?

Respiration **Supplement**

What is an oxygen debt?

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How is the oxygen debt removed after exercise?

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Where is lactic acid broken down after exercise?

glucose → alcohol + carbon dioxide

Anaerobic respiration releases much less energy per glucose molecule.



glucose → lactic acid

Fast heart rate carries lactic acid to the liver; deeper, faster breathing supplies oxygen; lactic acid is broken down by aerobic respiration in the liver.

The extra oxygen needed after vigorous exercise, caused by lactic acid building up in muscles and blood.

In the liver, by aerobic respiration.