

Edexcel (A) Biology A-level

CP16 - Investigate rate of respiration

Flashcards



Describe how a respirometer works.



Describe how a respirometer works.

It is a chamber connected to a capillary tube with a drop of dye. As the organism in the chamber respire and uses oxygen, the pressure decreases and the liquid moves in the capillary.



What is the control for this practical?



What is the control for this practical?

Replace the organism with an inert object of the same mass.



How do you use the volume of oxygen consumed using a respirometer?



How do you use the volume of oxygen consumed using a respirometer?

Place a fixed mass of soda lime in the respirometer with the organism. Measure the distance moved by the dye, and use the formula $\text{volume} = \text{distance} \times \pi r^2$



How can the volume of carbon dioxide produced be found?



How can the volume of carbon dioxide produced be found?

Perform two set-ups, one with soda lime (A) and one without (B). Find the volume of gas used in the given time.

Volume of carbon dioxide: volume of A - volume of B



How is the rate of respiration calculated using data from the respirometer?



How is the rate of respiration calculated using data from the respirometer?

Rate =

Volume of oxygen used / mass of
organism / time



State the hazard and safety precaution involved in the practical.



State the hazard and safety precaution involved in the practical.

The soda lime is corrosive. Wear eye protection and handle with gloves.



What are the controlled variables of this practical?



What are the controlled variables of this practical?

Mass of organism

Temperature

Mass of soda lime

Apparatus must be airtight, replace air
between each set-up



What is the formula for the respiratory quotient?



What is the formula for the respiratory quotient?

RQ =

Volume of carbon dioxide produced / Volume
of oxygen absorbed

