

Edexcel Biology GCSE

CP07 - Respiration

Flashcards

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State the apparatus used to measure the rate of respiration of a small organism.



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A respirometer.



Why is soda lime added to the respirometer?



Why is soda lime added to the respirometer?

To absorb carbon dioxide in the respirometer so that the only change in volume results from change in oxygen volume.



How does the respirometer measure the rate of respiration?



How does the respirometer measure the rate of respiration?

The change in position of a drop of dye in the capillary tube indicates the volume of oxygen consumed for respiration. The rate of oxygen consumption is proportional to the rate of respiration.



State the controlled variables of this practical.



State the controlled variables of this practical.

Temperature

Mass of soda lime

Time



How is the rate of respiration calculated?



How is the rate of respiration calculated?

Rate of respiration = volume of oxygen
consumed / mass of organism $\text{cm}^3 \text{g}^{-1}$



State a source of error in this practical.



State a source of error in this practical.

If using animals, stress in captivity may affect the rate of photosynthesis.

The apparatus may not be airtight which may affect the movement of the dye.



How is the volume of oxygen consumed measured?



How is the volume of oxygen consumed measured?

By reading off the markings of the capillary tube, or measuring the distance moved by the dye and find volume using πr^2 .



How can the reliability of this practical be improved?



How can the reliability of this practical be improved?

By repeating the practical at least 3 times to find the mean volume of oxygen consumed and calculate a mean rate.

