OCR (A) Biology GCSE

PAG 05 - Photosynthesis

Flashcards

State the factors affecting the rate of photosynthesis.

State the factors affecting the rate of photosynthesis.

Light intensity

Carbon dioxide concentration

Temperature

How is the rate of photosynthesis measured?

How is the rate of photosynthesis measured?

Place a piece of cut pondweed into a beaker containing sodium hydrogen carbonate solution.

Count the number of bubbles produced in a given time.

How is light intensity controlled?

How is light intensity controlled?

By placing the lamp/light source at different distances from the plant.

Why is the number of bubbles formed per minute counted?

Why is the number of bubbles formed per minute counted?

The bubbles formed indicates the production of oxygen during photosynthesis. The rate of bubble formation is proportional to the rate of photosynthesis.

State a source of error in this practical.

State a source of error in this practical.

Bubbles may appear too quickly to be accurately counted.

What is the purpose of adding sodium hydrogen carbonate to the beaker containing pondweed?

What is the purpose of adding sodium hydrogen carbonate to the beaker containing pondweed?

To provide carbon dioxide for photosynthesis.

What is the inverse square law?

What is the inverse square law?

Light intensity is inversely proportional to the square of distance:

Light intensity $\propto$ 1/distance^2

How is the effect of carbon dioxide concentration on the rate of photosynthesis investigated?

How is the effect of carbon dioxide concentration on the rate of photosynthesis investigated?

Keep light intensity and temperature constant, change the concentration of sodium hydrogen carbonate solution.

How is the effect of temperature on the rate of photosynthesis investigated?

How is the effect of temperature on the rate of photosynthesis investigated?

By immersing the set up in a range of thermostatically-controlled water bath, keeping light intensity and carbon dioxide concentration constant.

How is the reliability of this practical improved?

How is the reliability of this practical improved?

By repeating the practical at each light intensity at least twice and take a mean number of bubbles.