

# Edexcel (B) Biology A-level

## CP08 - Environmental conditions and water uptake

### Flashcards

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# What is the function of a potometer?



## What is the function of a potometer?

A device used to measure the rate of water uptake of a plant, and hence the rate of transpiration.



Which factors affect the rate of transpiration?



Which factors affect the rate of transpiration?

Temperature

Water supply

Humidity

Surface area

Wind speed

Presence of cuticle

Light intensity



Why must the leafy shoot be cut  
underwater?



Why must the leafy shoot be cut underwater?

To prevent air bubbles from forming in the vascular tissue.



Outline the procedure to this practical.





## Outline the procedure to this practical.

1. Set up the potometer.
2. Clamp the capillary tube into the stand. Place the bottom of the capillary tube into the beaker of water.
3. Smear petroleum jelly around the join to maintain airtight conditions.
4. Leave for 5 minutes for a bubble to be drawn into the capillary tube.
5. Measure the movement of the bubble along the capillary tube in a certain length of time.
6. Repeat the experiment and change the abiotic variable



How is the rate of transpiration  
calculated?



## How is the rate of transpiration calculated?

Measure the distance travelled by the bubbles in the capillary and the radius of the capillary.

Find the volume of water taken up by using  $\pi r^2$ .

Divide the volume by time.



# How is light intensity controlled?



## How is light intensity controlled?

By changing the distance between the lamp and the potometer.



# How can wind speed be controlled?



# How can wind speed be controlled?

By placing a fan near the potometer with different speeds.



# How can humidity be controlled?





# How can humidity be controlled?

By wrapping a plastic bag around the plant to maintain a humid environment.

