

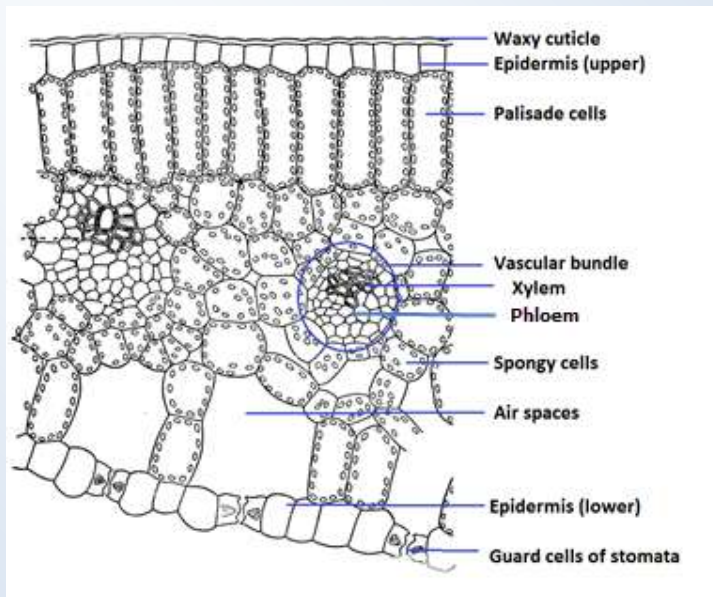
Activity 1 – Linking structure and function

Using the diagram of leaf cells write five sentences to describe how each type of cell is adapted to its function. Your sentences should have both a structure and a function linked together.

The functions should include:

- absorption of light,
- production of glucose through photosynthesis
- gas exchange, of CO₂ from the air to the leaf cells
- water conservation, i.e. prevention of water loss
- the transport of water into the leaf (the transpiration stream)
- transport of products of photosynthesis out of the leaf.

The Cells of a Leaf



For example:

The waxy cuticle of the leaf helps water conservation, it prevents water loss in the upper epidermis

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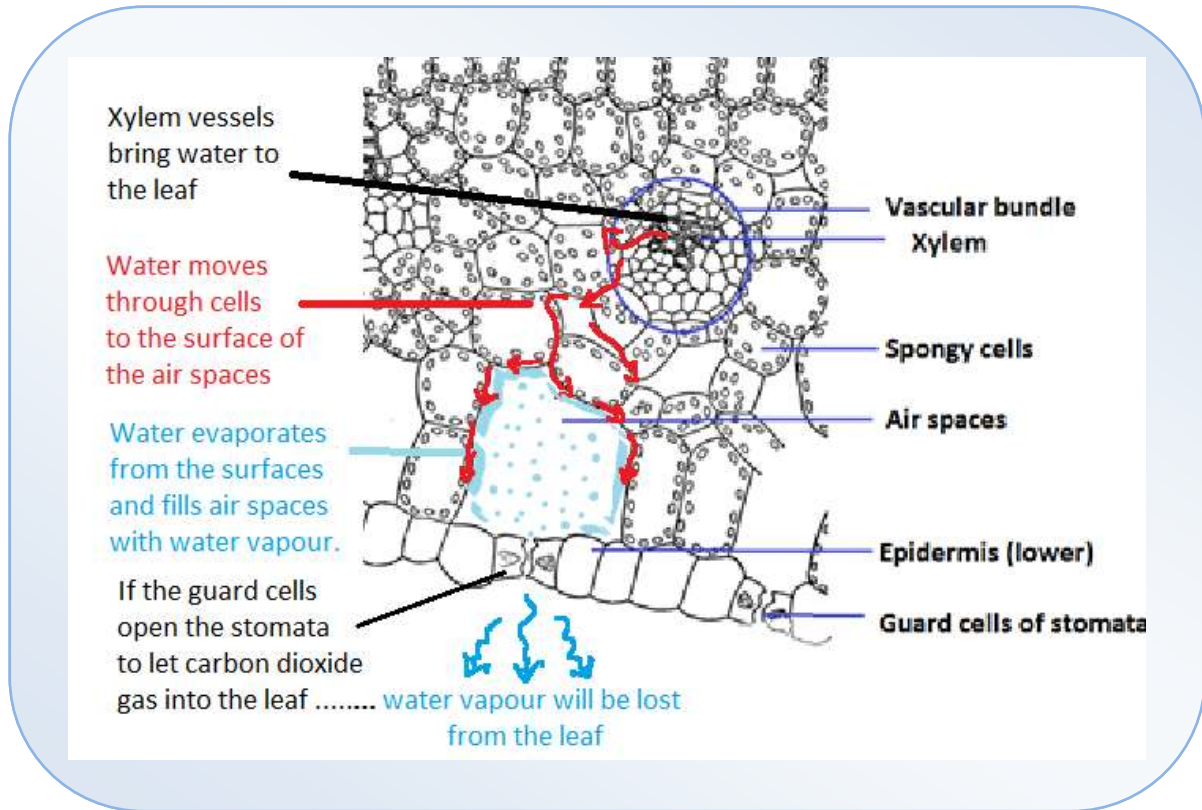
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Activity 2 – The Guard cell’s dilemma

This diagram shows the movement of water through a leaf from the xylem to the stomata..
Use these details to answer the questions below.



Questions

- Which gas is needed by the leaf so that it can do photosynthesis?
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- How does this gas get into the leaf?
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- When a leaf is fully hydrated the guard cells open the stomata. Which gases will diffuse into or out of the leaf.
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- If the leaf is lacking water the guard cells close. What is the effect of this on the rate of photosynthesis?
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