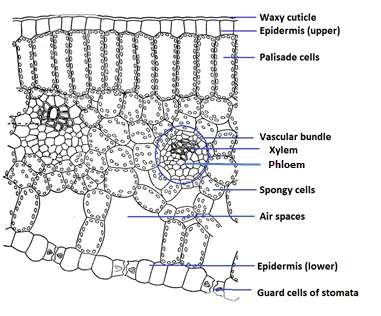
# Activity 1 – Linking structure and function

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:



The Cells of a Leaf

* 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.

For example:

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

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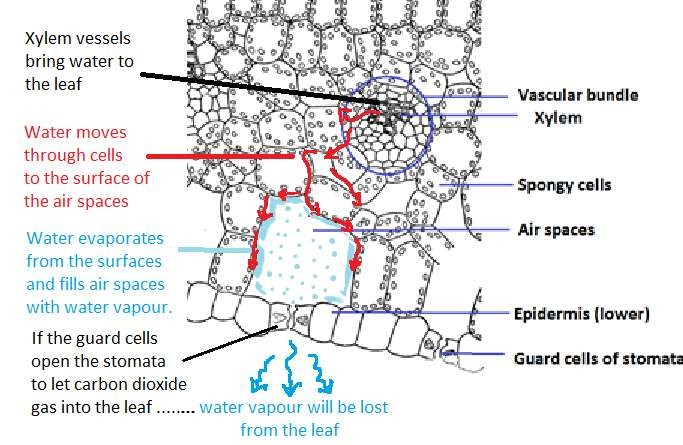
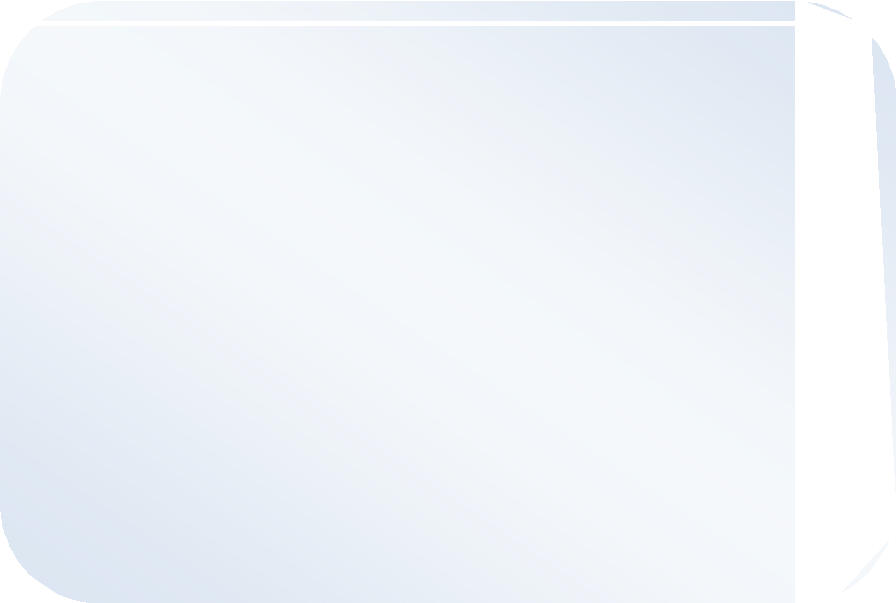
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# Activity 2 – The Guard cell’s dilemma

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

1. Which gas is needed by the leaf so that it can do photosynthesis?

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1. How does this gas get into the leaf?

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1. 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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1. 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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