

Transpiration is the process of water movement through a plant and its evaporation from aerial parts, such as leaves, stems and flowers. Water is necessary for plants but only a small amount of water taken up by the roots is used for growth and metabolism. The remaining 97–99.5% is lost by transpiration and guttation. Leaf surfaces are dotted with pores called stomata, and in most plants they are more numerous on the undersides of the foliage. The stomata are bordered by guard cells and their stomatal.

Transpiration



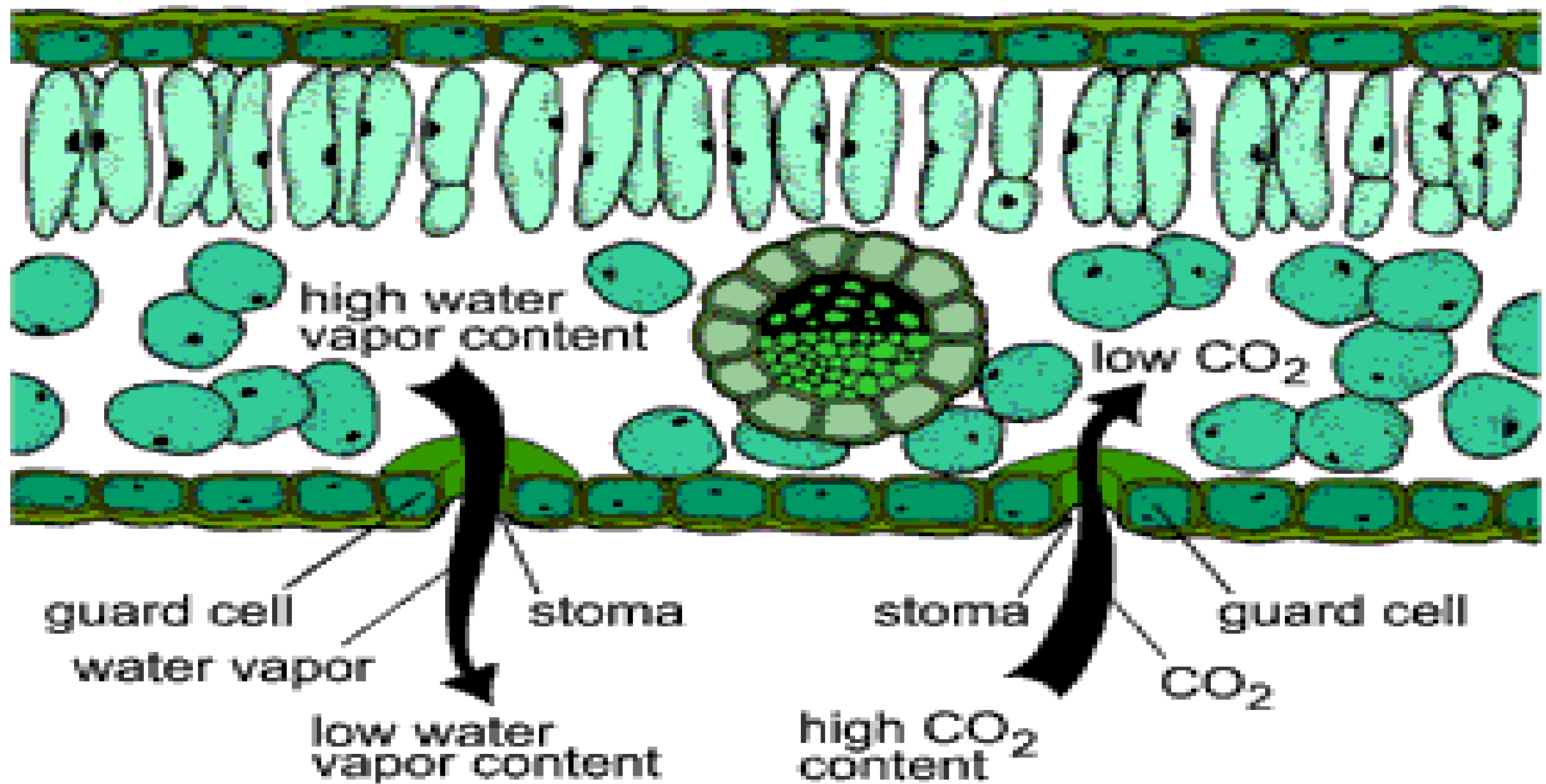
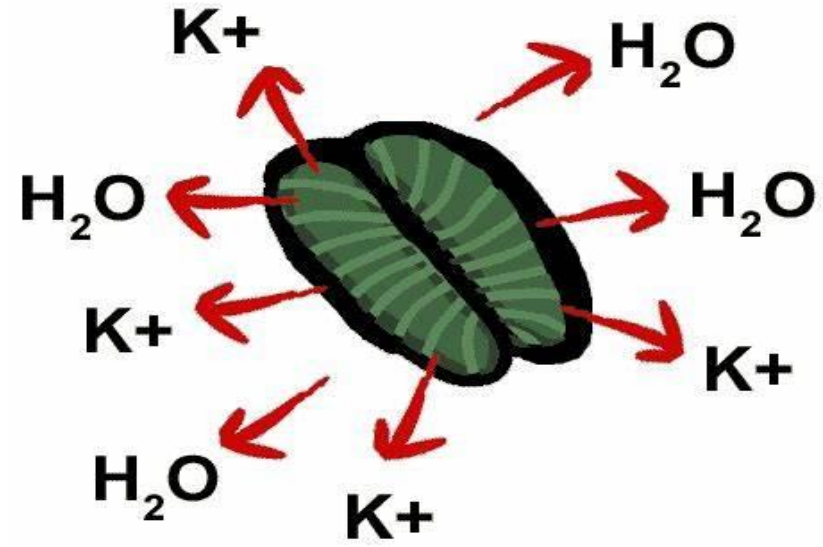


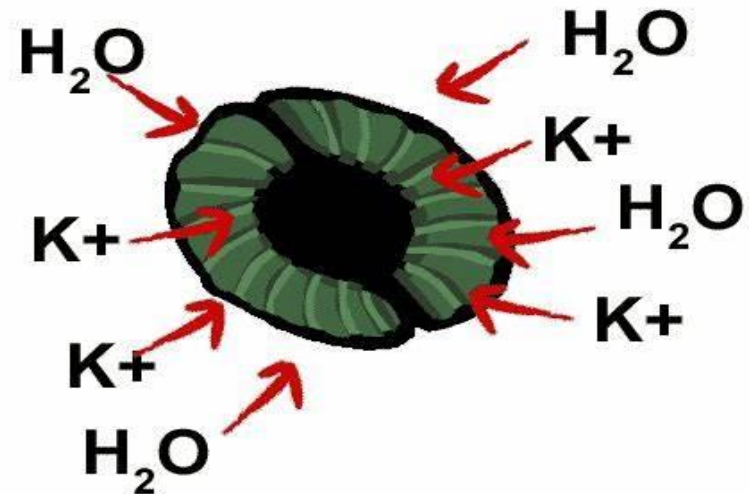
Figure 25. Stomata open to allow carbon dioxide (CO_2) to enter a leaf and water vapor to leave.

- When a leaf's guard cell swollen, its stoma open and water is lost. As water is lost through the stoma, more water has to be taken in through the roots. Transpiration is a necessary process for plants and accounts for about 90% of the water that a plant uses. Transpiration is affected by temperature, humidity, and wind or air movement. Transpiration is necessary for several things:
 - Transporting minerals throughout the plant.
 - Cooling the plant through evaporation
 - Moving sugars and plant chemicals.
 - Maintaining turgor pressure

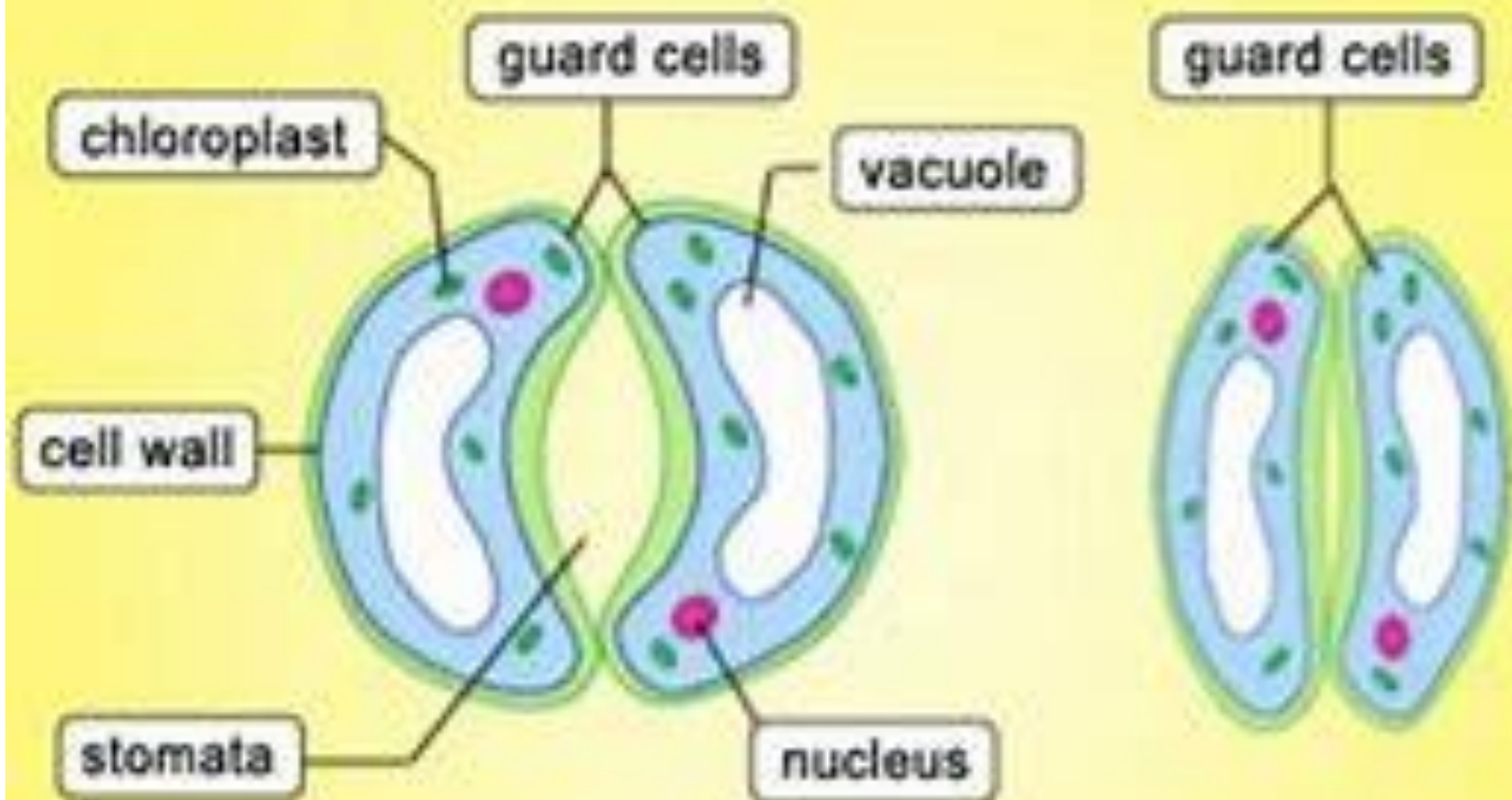
Closed Stomata



Open Stomata

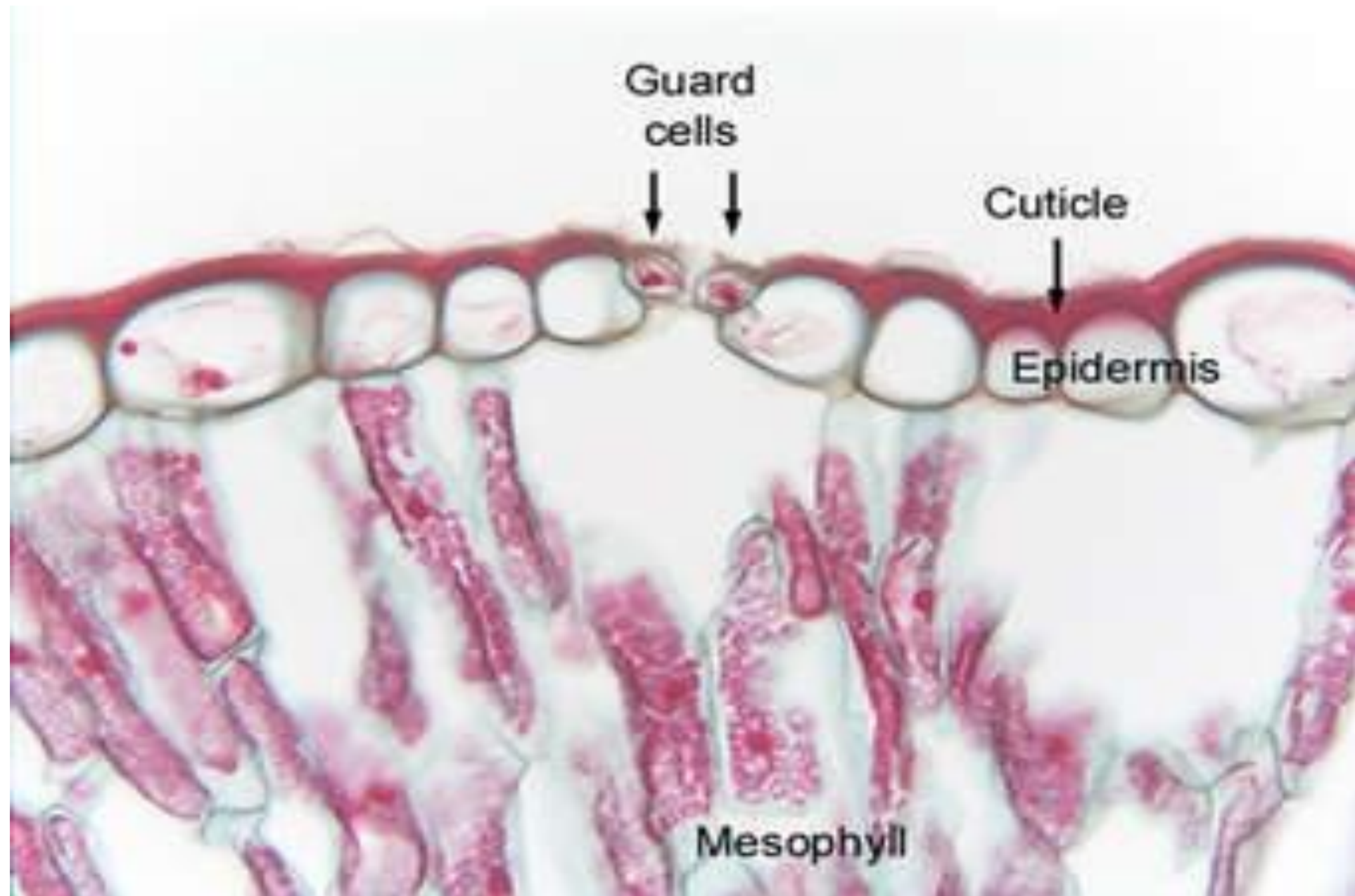






Situation 1

Situation 2



- Any questions?
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