

Solutions

Each answer shows the steps, then the **result**.

2.1

- letting in carbon dioxide for photosynthesis; limiting water loss by transpiration

2.2

- abscisic acid (ABA)

3.1 B

- Gaining ions lowers the water potential, water enters by osmosis, and the turgid guard cells open the pore

3.2 B

- Calcium ions act as a second messenger inside the guard cells

3.3

- guard cells actively pump in ions, lowering their water potential; water enters by osmosis, so they become turgid; the unevenly thickened walls make them bend apart, opening the pore

3.4

(a)

- closing the stomata reduces water loss by transpiration, conserving the limited water

(b)

- less carbon dioxide can enter, so the rate of photosynthesis falls / less food is made