

Exercise walk-through

Adaptive features ■ 18.2

eXercise

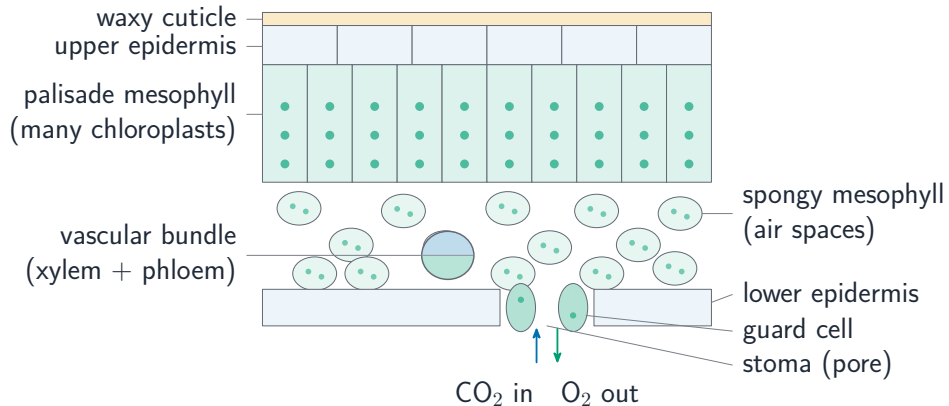
You must be able to

- define an adaptive feature
- describe the adaptive features of a xerophyte (desert plant)
- describe the adaptive features of a hydrophyte (water plant)

Method — Adaptations

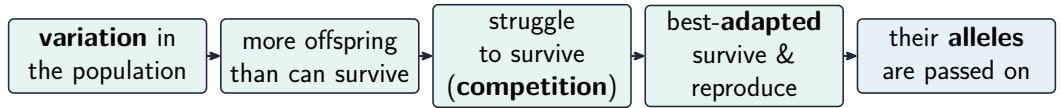
- **xerophyte (desert):** thick waxy cuticle, few small stomata, water storage → reduce water loss.
- **hydrophyte (water):** air spaces to float; stomata on the upper surface.

Method — Adaptations



A leaf cross-section — adaptations for the environment

Method — Adaptations



over many generations the population becomes better adapted

Adaptive features arise through natural selection

Practice 2.1 ■ 1 mark

Define an adaptive feature.

Solution 2.1

Method: Adaptations

Worked steps

an inherited feature that helps an organism survive and reproduce in its environment

B1.

Practice 2.2 ■ 1 mark

State one adaptive feature of a desert plant.

Solution 2.2

Method: Adaptations

Worked steps

any of: thick waxy cuticle; few/small stomata; water storage **B1**.

Exam-style 3.1 ■ 1 mark

A thick waxy cuticle helps a desert plant by:

- A** increasing water loss
- B** reducing water loss
- C** trapping more light
- D** attracting insects

Solution 3.1

Method: Adaptations

A increasing water loss

B reducing water loss



C trapping more light

D attracting insects

Worked steps

B. A thick waxy cuticle reduces water loss.

Exam-style 3.2 ■ 4 marks

Xerophytes live where water is scarce.

(a) Describe two adaptive features that reduce water loss, and how each helps.

Solution 3.2

Method: Adaptations

Worked steps

(a) a thick waxy cuticle **M1** reduces evaporation from the leaf surface **A1**;
few/small stomata **M1** reduce water lost by transpiration **A1**.