

8 Transpiration and translocation – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)		
Transpiration	蒸腾作用	_____	_____	_____
water vapour	水蒸气	_____	_____	_____
evaporates	蒸发	_____	_____	_____
mesophyll	叶肉	_____	_____	_____
diffuses	扩散	_____	_____	_____
stomata	气孔	_____	_____	_____
transpiration pull	蒸腾拉力	_____	_____	_____
Translocation	转运	_____	_____	_____
source	源	_____	_____	_____
sink	库	_____	_____	_____

Recall

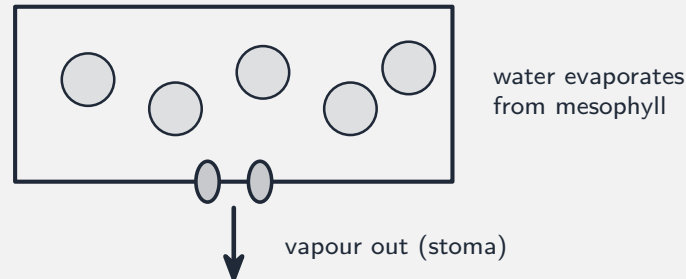
Most of the water a plant takes up is lost again from its leaves. This loss is called transpiration.

New ideas

Read these first, then do the Practice.

■ 1 Transpiration

Transpiration 蒸腾作用 is the loss of **water vapour** 水蒸气 from the leaves:

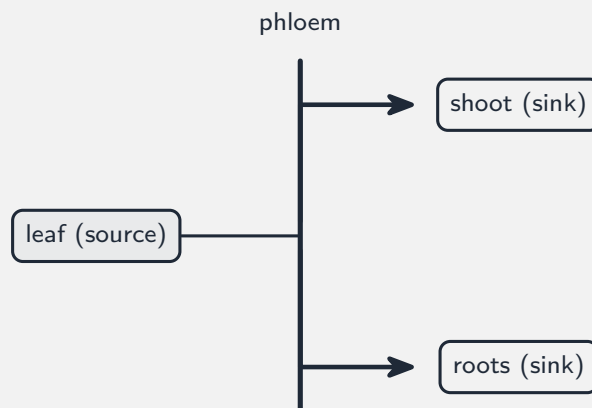


- water **evaporates** 蒸发 from the wet **mesophyll** 叶肉 cells into the air spaces;
- the vapour then **diffuses** 扩散 out through the **stomata** 气孔.

It is faster when it is hotter, windier or drier. The loss pulls more water up the xylem—the **transpiration pull** 蒸腾拉力.

■ 2 Translocation

Translocation 转运 is the movement of sucrose in the phloem, from a **source** 源 (where it is made, e.g. a leaf) to a **sink** 库 (where it is used or stored, e.g. roots):



The direction can change with the season.

Watch out: transpiration (water vapour leaving the leaf) is faster when it is hotter, windier or drier. **Translocation** moves sucrose in the *phloem* from **source** to **sink**, and the direction can change with the season.

Practice

Try these in order.

8.6 Define *transpiration*. [2]

8.7 Out of which tiny holes does water vapour leave the leaf? [1]

8.8 Name two things that make transpiration faster. [2]

8.9 In translocation, what is a *source*? [1]

8.10 Give one example of a sink. [1]

8.11 Challenge. On a hot, windy day a plant wilts. Explain why, linking transpiration to the water in its cells. [2]