

# 8 Transpiration and translocation – Part 2

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

## Vocabulary

Write each word three times.

| English            | Write it 3 times (English) |       |       |
|--------------------|----------------------------|-------|-------|
| Transpiration      | _____                      | _____ | _____ |
| water vapour       | _____                      | _____ | _____ |
| evaporates         | _____                      | _____ | _____ |
| mesophyll          | _____                      | _____ | _____ |
| diffuses           | _____                      | _____ | _____ |
| stomata            | _____                      | _____ | _____ |
| transpiration pull | _____                      | _____ | _____ |
| Translocation      | _____                      | _____ | _____ |
| source             | _____                      | _____ | _____ |
| sink               | _____                      | _____ | _____ |

## Recall

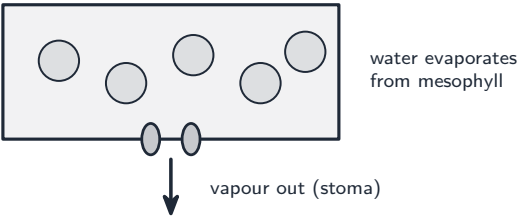
Most of the water a plant takes up is lost again from its leaves. This loss is called transpiration.

## New ideas

Read these first, then do the Practice.

### ■ 1 Transpiration

**Transpiration** is the loss of **water vapour** from the leaves:

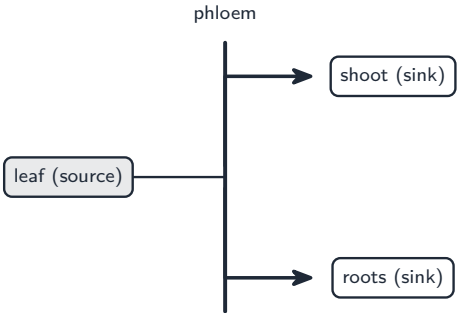


- water **evaporates** from the wet **mesophyll** cells into the air spaces;
- the vapour then **diffuses** out through the **stomata**.

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

### ■ 2 Translocation

**Translocation** is the movement of sucrose in the phloem, from a **source** (where it is made, e.g. a leaf) to a **sink** (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]