

8.4 Translocation

Name: _____ Class: _____ Date: _____ **Total: 6 marks**

KEY WORDS sinks 库 • translocation 转运 • sources 源 • phloem 韧皮部 • sucrose 蔗糖

Objective

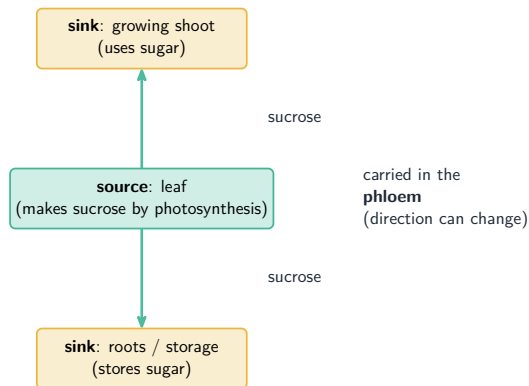
Build the skills to answer exam questions on **translocation** 转运 — the movement of sucrose and amino acids in the phloem from **sources** 源 to **sinks** 库.

You must be able to:

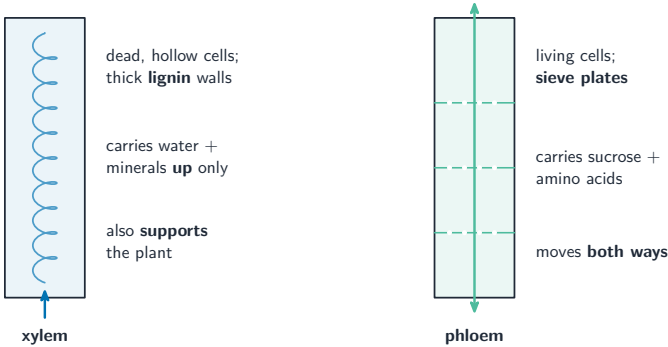
- define translocation
- identify sources and sinks
- explain why the direction can change

1 Worked examples

■ Sources and sinks



Translocation moves sucrose/amino acids from a source to a sink; the direction can change



Translocation moves sugars in the phloem

- **source:** releases sucrose (e.g. a photosynthesising leaf, or a store being used).
- **sink:** uses or stores it (e.g. growing roots, a storage organ).

2 Practice

2.1 Define translocation. [1]

2.2 Give one example of a source. [1]

3 Exam-style questions

3.1 Translocation moves substances in the: [1]

- A xylem, upward only
- B phloem, from source to sink
- C xylem, from leaves to roots
- D air spaces

3.2 A leaf making sugar in summer acts as a source.

(a) Name a sink that the sugar might be transported to. [1]

(b) Explain why a potato tuber can be a sink in summer but a source in spring. [2]

Solutions

2.1 the movement of sucrose and amino acids in the phloem (from source to sink).

2.2 a photosynthesising leaf (or a storage organ releasing sugar).

3.1 B. Translocation moves substances in the phloem from source to sink.

3.2 (a) growing roots / a storage organ.

(b) in summer it stores sugar, so it is a sink; in spring it releases stored sugar to grow new shoots, so it becomes a source.