

Homework 7.1

Transport in plants

This worksheet relates to the structure and function of transport tissues and transpiration in plants. You will also apply your knowledge of transpiration to interpret data.

- 1 a** Plants have two transport tissues, xylem and phloem. Describe the structure of these tissues. [6]
- b** Explain how hydrogen bonding in water molecules is involved with movement in xylem vessels. [4]
- c** The table below shows the transpiration rate of a sunflower plant at different times of the day. Transpiration rate is measured as grams of water lost per hour.

| Time of day / 24-hour clock | Transpiration rate / g hr ⁻¹ |
|-----------------------------|---|
| 06.00 | 4.0 |
| 08.00 | 18.2 |
| 10.00 | 32.4 |
| 12.00 | 44.0 |
| 14.00 | 51.5 |
| 16.00 | 36.6 |
| 18.00 | 21.0 |

Suggest reasons for the changes in transpiration rate during the following time periods.

- i** 06.00 to 14.00 [2]
- ii** 14.00 to 18.00 [2]
- d** Describe **two** ways in which the leaves of a xerophytic plant are adapted to reduce transpiration. [2]

[Total: 16]