Name: Class:

Experiment worksheet

7.10 Plants have tissues and organs

Pages 134–135 and 209

Challenge 7.10B: Locating the xylem and phloem in a stem

What you need

- 500 mL beaker
- Water
- Blue or red food colouring
- Fresh stick of celery
- Scalpel and cutting board
- Permanent marker
- Magnifying glass

What to do

1 Add 200 mL of water to the beaker.

2 Add 15 drops of food colouring to the water.

3 Cut the bottom 10 cm off the celery.

4 Place the top half of the celery in the beaker of coloured water.

5 Mark the water level with a permanent marker. Leave for 2–3 days.

6 Remove the celery from the water and use the scalpel to cut a horizontal transverse section of the celery stalk.

7 Locate the pathway by which the coloured water moved through the celery. Draw a labelled diagram of the celery cross-section.

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Name: Class:

Discussion

1 What did you notice about the amount of water in the beaker after 2–3 days?

2 Use the term 'transpiration' to explain your answer to the previous question.

3 What is the name of the pathway that moved the coloured water through the celery?

4 How is this similar to the circulatory system in humans? How is it different?

FIGURE 1 (a) The dye marks the path the water takes from the roots. (b) As water evaporates from the leaves, the dye water replaces it.

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