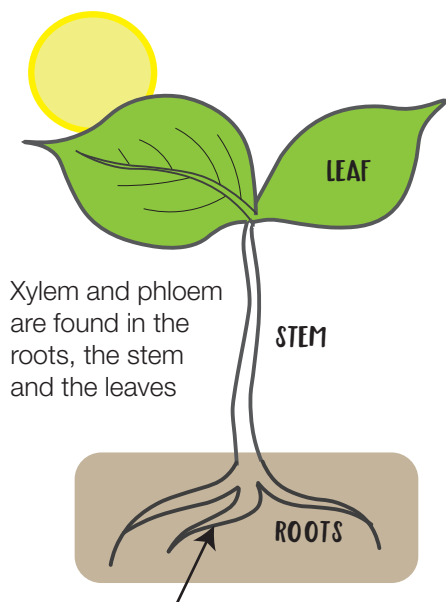


BIOLOGY

WORKSHEET - XYLEM AND PHLOEM

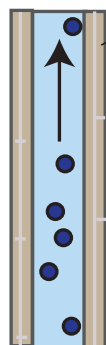


Xylem and phloem are found in the roots, the stem and the leaves

Starch is stored in the root

Xylem and phloem are the tissues that transport substances around a plant.

XYLEM



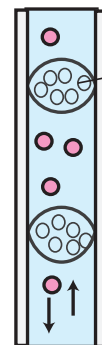
Lignin for strength.

Cells are empty and end walls are missing.

Xylem carries water and minerals.

Water only flows upwards (one way flow).

PHLOEM



End walls of cells have holes in them (sieve plates).

Carries sugar solution (glucose) to all parts of the plant.

Two way flow of sugar solution.

Xylem carries water and minerals upwards in a continuous flow through the root and the stem until it reaches the leaves. It diffuses out of the leaves into the surrounding air. This is called transpiration.

QUESTIONS

1) Correct following sentence:

“Xylem carries a two way flow of water and minerals ”.

2) Which word best describes xylem cells?

- Empty Alive Active

3) In which type of tissue are structures called sieve plates found?

Describe the role that sieve plates play in transport within a plant.

4) A plant can store starch in many areas, from the leaves down to the roots.

What does this tell us about transport of sugar solution in phloem tubes?

5) Xylem and phloem help to support a plant, keeping it upright. What part of these tissues is particularly involved in support?

6) What is the flow of water through a plant called?

7) Fully describe the pathway that water follows through a plant.

8) **Extended:** Phloem cells need a lot of energy to transport sugar solution and other substances around the plant. Explain why xylem does not need energy to transport water.