

Transport in plants

Give three adaptations of a root hair cell.

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How do root hair cells take in mineral ions?

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How does water enter a root hair cell?

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What does xylem carry?

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Why are xylem cells lignified and dead?

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What does phloem carry?

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Why are phloem cells living?

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What is the role of companion cells?

By active transport, using energy from respiration.

Long thin projection for a large surface area, thin wall, and many mitochondria for active transport.

Water and mineral ions, from the roots to the rest of the plant.

By osmosis, because the cell sap is more concentrated than the soil water.

Sucrose, dissolved in water, around the plant.

Dead cells with no end walls form a hollow tube for water, and lignin strengthens the walls.

They have many mitochondria and release the energy needed for the transport of sucrose in the phloem.

They use energy from respiration to transport sucrose.

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What is transpiration?

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Put the path of water in order.

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What are stomata?

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How do guard cells close a stoma?

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What is translocation?

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**Where does sucrose move to and from
in translocation?**

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Does translocation need energy?

Root hair cell → xylem → leaf cells
(evaporation) → air spaces → out through
the stomata.

The loss of water vapour from the leaves,
which pulls water and mineral ions up
through the plant.

They lose water and become limp, which
reduces water loss.

Pores in the leaf surface, each surrounded
by two guard cells, which let gases in and
out.

From the leaves to the parts of the plant
that use or store it, such as roots, shoots
and fruits.

The transport of sucrose around the plant
in the phloem.

Yes. It is carried out by the living cells of the
phloem, using energy from respiration.