

Plant tissues, fibres and mineral nutrition

Function of sclerenchyma fibres?

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Function of xylem vessels?

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Function of phloem?

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How is a companion cell different from a sieve tube element?

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Order of tissues in a dicot stem vascular bundle, from the centre outwards.

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What must a plan diagram not include?

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How do you avoid air bubbles when mounting a section?

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Formula for magnification.

Support, and transport of water and mineral ions up the plant.

Support. Dead cells with thick lignified walls giving high tensile strength.

It has a nucleus, dense cytoplasm and many mitochondria; the sieve tube element has little cytoplasm and no nucleus.

Translocation of organic solutes, such as sucrose, from sources to sinks in both directions.

Individual cells. It shows only the outline and tissue boundaries.

Xylem, phloem, sclerenchyma (cap).

Magnification = size of image $\div$ size of real object.

Lower the coverslip at an angle with a mounted needle.

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Define sustainability.

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Name two plant-based replacements for oil-based plastics.

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Why do plants need nitrate ions?

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Why do plants need calcium ions?

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Why do plants need magnesium ions?

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Two functions of water in plants.

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Formula for tensile strength.

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How do you convert a mass to a force?

Starch-based plastics and plant fibre materials (for example hemp or flax).

Meeting the needs of the present without harming the ability of future generations to meet their own needs.

To form calcium pectate in the middle lamella and cell walls; also for membrane structure.

Nitrogen for amino acids, proteins, nucleotides and chlorophyll.

Turgor and support; solvent and transport medium; reactant in photosynthesis; cooling by transpiration.

Magnesium is the central atom in chlorophyll.

Force (N) = mass (kg) $\times$ 9.81 N kg⁻¹.

Breaking force (N) $\div$ cross-sectional area (mm²).