

# Plant support and transport: cells to groups

Compare simple and vascular plant tissues and see how mosses differ

• Plant tissues and plant groups

◆ Living simple tissues

Parenchyma: living thin-walled cells for storage, photosynthesis (chlorenchyma), buoyancy.

Collenchyma: living cells with unevenly thickened corners in leaf stalks and young stems.

Collenchyma provides flexible mechanical support, allowing organs to bend without breaking.

◆ Vascular tissues: xylem and phloem

Xylem (tracheids, vessels) conducts water and dissolved minerals upward from roots.

Phloem transports sugars from source tissues to growing or storage tissues.

Together they form vascular bundles enabling tall land plants to thrive.

○ Sclerenchyma: rigid mechanical strength

Usually dead at maturity, with thick, lignified cell walls.

Occurs as elongated fibres (jute, hemp) and gritty stone cells (sclereids).

Gives hardness and stiffness to nutshells, coconut husks and seed coats.

□ Mosses (bryophytes) vs vascular plants

Mosses are small green non-flowering bryophytes lacking true roots and vascular tissue.

Anchored by hair-like rhizoids; they absorb water directly across their body surface.

Reproduce via spores and require external water for fertilisation ('plant amphibians').

**REMEMBER** Sclerenchyma gives rigid support; xylem and phloem transport materials; mosses lack true vascular tissue.