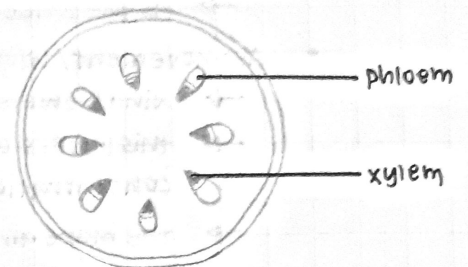


TRANSPORT IN PLANTS

TRANSPORT VESSELS

xylem

- conduct water and mineral salts from roots to leaves
- support
- adaptations
 - hollow lumen without protoplasm to reduce resistance to water
 - deposition of lignin on cell walls that strengthens and provides support



phloem

- conduct sugars and amino acids from leaves to other parts of plant (translocation)

TRANSPIRATION

- loss of water vapour from a plant, mainly through stomata of the leaves

transpiration pull

- water travels from roots to leaves via xylem vessels against gravity

TRANSPIRATION	TRANSPIRATION PULL
<ul style="list-style-type: none"> ◦ water from mesophyll cells form a thin film of moisture over their surface ◦ water evaporates from the thin film of moisture and moves into the intercellular air spaces. water vapour accumulates in the large air spaces near the stomata ◦ water vapour diffuses through stomata to drier air outside the leaf. This is transpiration. 	<ul style="list-style-type: none"> ◦ as water evaporates from the mesophyll cells, water potential of cell sap decreases ◦ Mesophyll cells begin absorbing water by osmosis from the cells deeper inside the leaf, which in turn remove water from veins (xylem vessels) ◦ this results in transpiration pull, a suction force which pulls the whole column of water up the xylem vessels