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### 3.1.3 TRANSPORT IN PLANTS: MOVEMENT

#### Translocation

Bulk movement of organic compounds in plants from sources to sinks via the phloem

Phloem unloading

Diffusion of sucrose from phloem to surrounding cells or converted into another substance

Companion cells

Many mitochondria - provide ATP for transport pumps

Large SA for active transport of sucrose

Cell membrane - many foldings

Phloem Loading

Active

Sucrose moves from source to sink via apoplast route

Passive

Sucrose moves from source to sink via symplast route

Water follows via osmosis creating pressure

Sucrose ends in sieve tube elements

Water moves through phloem by mass flow

#### Movement of water into the roots

Symplast pathway

Through cytoplasm of 1 root hair cell to another via osmosis

Through cell walls

Apoplast pathway

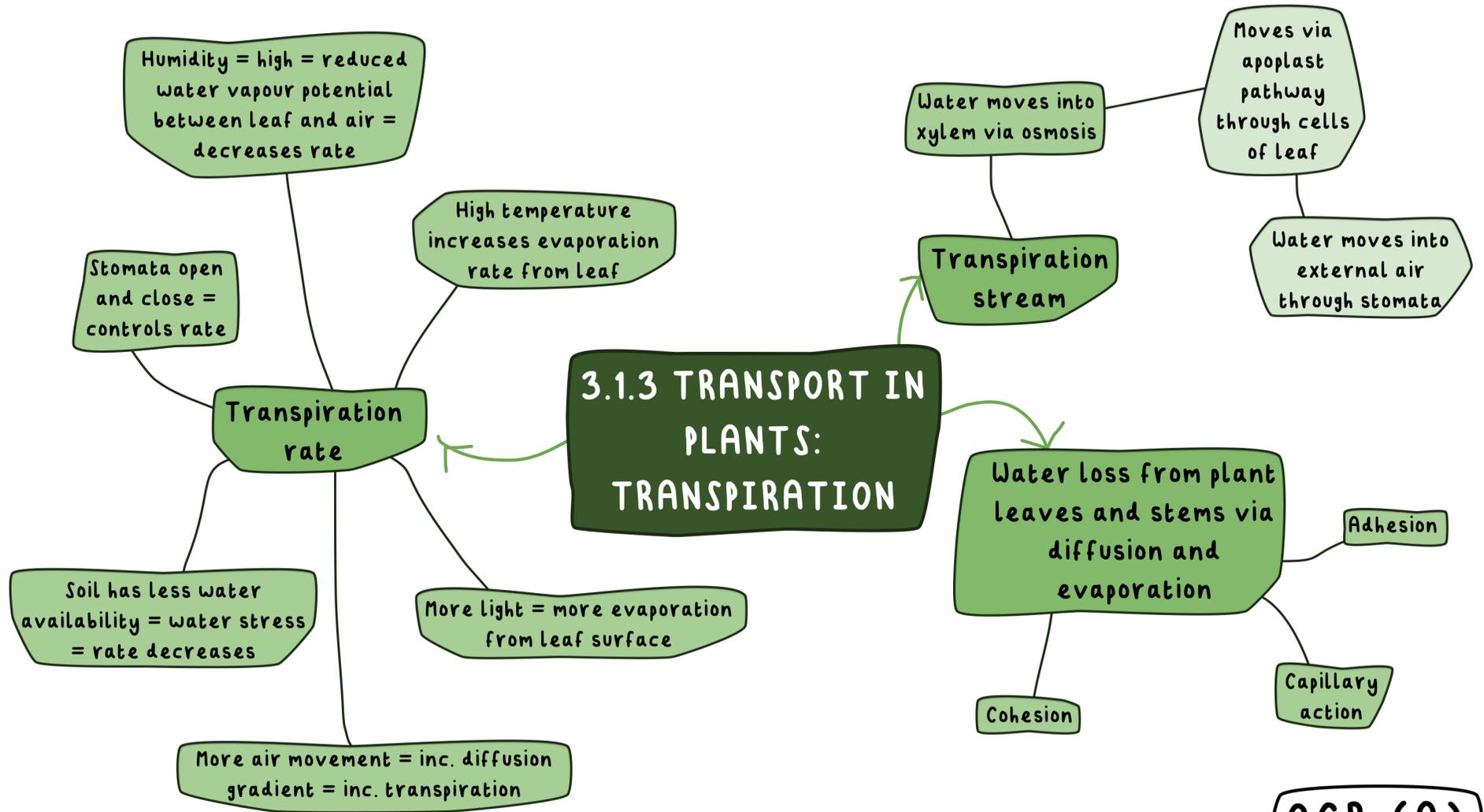
Pulls through apoplast due to cohesive forces

Moves into xylem

Reaches casparian strip - takes symplast pathway

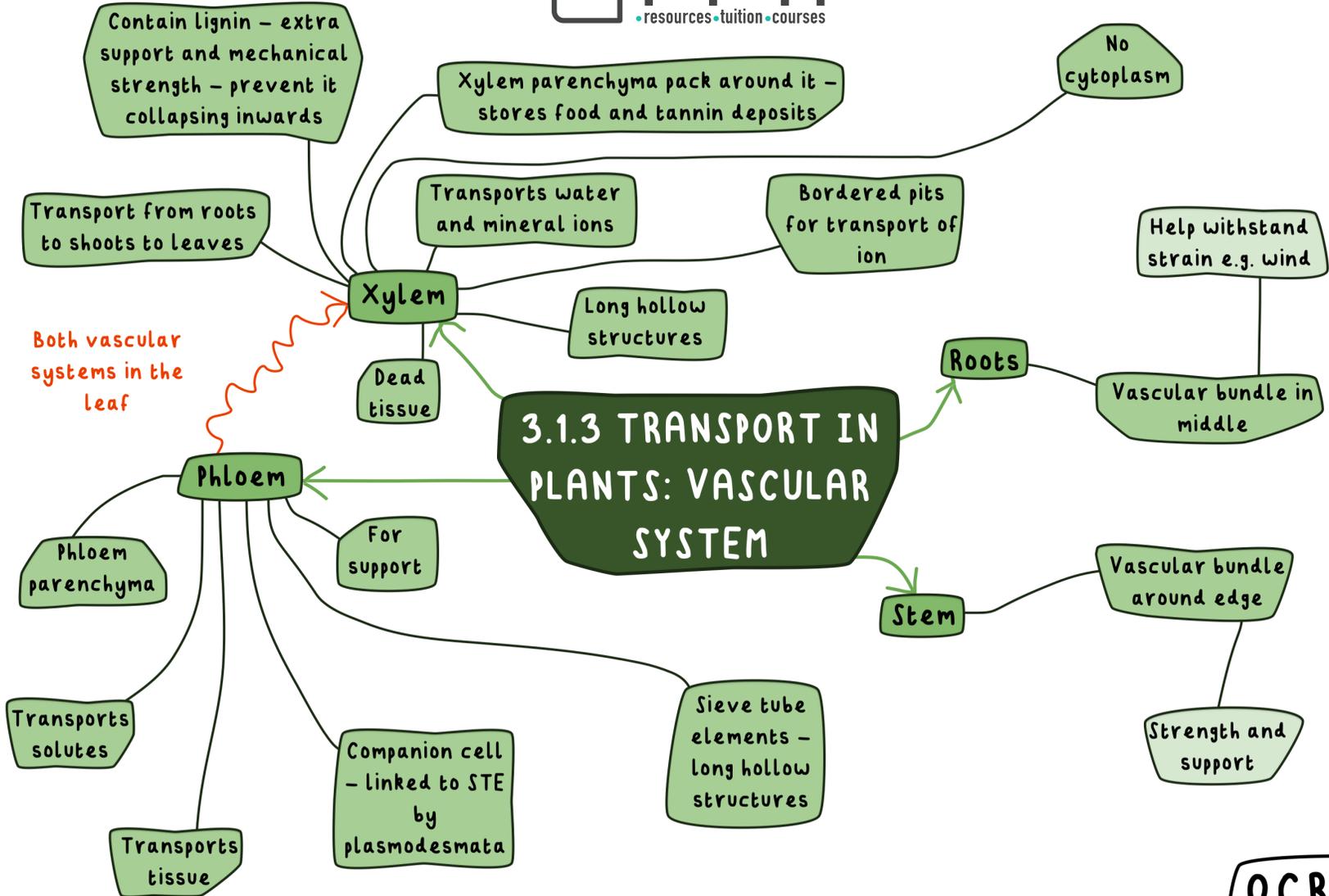
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