Transport in plants

IGCSE Biology · Vocabulary in context

Word	Example
xylem /ˈzaɪləm/	The **xylem** carries water up the plant.
mineral ions /ˈmɪnərəl ˈaɪɒnz/	Calcium and iron are **mineral ions** in our food.
support /səˈpɔːt/	The xylem gives **support** to the plant.
phloem /ˈfləʊɪm/	The **phloem** carries sugar through the plant.
sucrose /ˈsuːkrəʊs/	Plants move sugar around as **sucrose**.
amino acids /əˈmiːnəʊ ˈæsɪdz/	Proteins are made of **amino acids**.
vascular bundles /ˈvæskjʊlə ˈbʌndlz/	The **vascular bundles** contain xylem and phloem.
vessels /ˈveslz/	Water moves up the xylem **vessels**.
lignin /ˈlɪgnɪn/	**Lignin** makes the xylem walls strong.
root hair cells /ruːt heə selz/	**Root hair cells** take in water from the soil.
root hairs /ruːt heəz/	**Root hairs** give the root a large surface area.
surface area /ˈsɜːfɪs ˈeərɪə/	Smaller solid pieces provide more **surface area** for reaction.
cortex /ˈkɔːteks/	Water crosses the **cortex** of the root.
mesophyll /ˈmesəfɪl/	The **mesophyll** is the middle layer of the leaf.

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stain /steɪn/	Use a red **stain** to see the xylem.
transpiration /trænspəˈreɪʃn/	**Transpiration** is the loss of water from leaves.
water vapour /ˈwɔːtə ˈveɪpə/	**Water vapour** leaves the leaf through the stomata.
evaporates /ɪˈvæpəreɪts/	Water **evaporates** from the cells in the leaf.
air spaces /eə ˈspeɪsɪz/	Gases move through the **air spaces** in the leaf.
diffuses /dɪˈfjuːzɪz/	Water vapour **diffuses** out of the leaf.
stomata /ˈstəʊmətə/	Gases enter the leaf through the **stomata**.
temperature /ˈtemprɪtʃə/	The thermometer shows the water's **temperature**.
wind speed /wɪnd spiːd/	A higher **wind speed** increases transpiration.
humidity /hjuːˈmɪdɪti/	High **humidity** slows transpiration.
concentration gradient /ˌkɒnsənˈtreɪʃn ˈgreɪdɪənt/	Oxygen moves down a **concentration gradient**, from high to low.
potometer	A **potometer** measures how fast a shoot takes up water.
transpiration pull /trænspəˈreɪʃn pʊl/	**Transpiration pull** draws water up the stem.
forces of attraction /ˈfɔːsɪz ɒv əˈtrækʃn/	**Forces of attraction** hold the water molecules together.
column /ˈkɒlʌm/	A **column** of water rises up the xylem.

Word	Example
wilts /wɪlts/	A plant **wilts** when it does not get enough water.
turgor /ˈtɜːgə/	**Turgor** keeps the plant upright; without water, it wilts.
turgid /ˈtɜːdʒɪd/	A **turgid** plant cell is firm and full of water.
flaccid /ˈflæsɪd/	A **flaccid** cell is soft because it has lost water.
translocation /trænsləʊˈkeɪʃn/	**Translocation** moves sugar through the phloem.
sources /ˈsɔːsɪz/	Leaves are **sources**: they make sugar.
sinks /sɪŋks/	Roots and fruits are **sinks**: they use or store sugar.
active transport /ˈæktɪv ˈtrænspɔːt/	**Active transport** uses energy to move ions into root cells.
osmosis /ɒzˈməʊsɪs/	Water enters the root by **osmosis**.

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