



Water

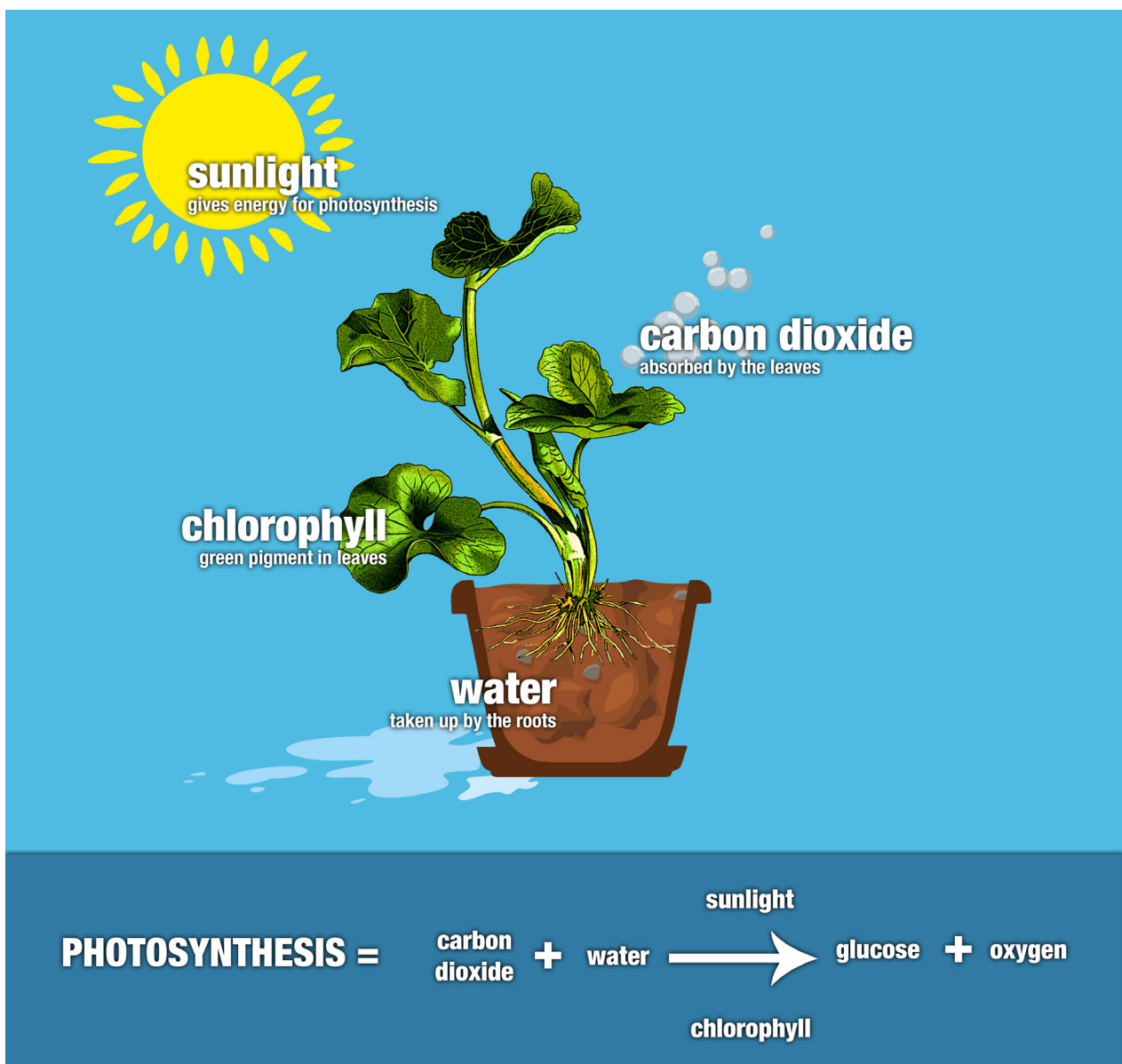
Water for energy



Plants need water for photosynthesis, the process where energy from sunlight is used to turn carbon dioxide and water into a type of sugar called glucose. Plants use glucose for energy to keep them growing. Oxygen is made during the process too but plants don't need it so they release it into the air for humans to breathe. Photosynthesis takes place in plant cells containing chlorophyll – a special pigment which makes leaves and stems appear green.

Water plays another important role in photosynthesis by keeping the cell vacuoles full so that the leaves stay turgid (slightly swollen). When leaves are turgid, the stomata (pores) stay open so that carbon dioxide for photosynthesis can enter. When leaves lose water, they become flaccid (drooping), the stomata close and carbon dioxide can't enter.

Just a 10% shortage of water can cause a 50% decrease in the rate of photosynthesis, and if a plant is so short of water that it wilts, photosynthesis will stop and the plant will die.





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Can you complete these sentences about photosynthesis? Drag the words into the correct boxes. You can use the introduction to help you.

is how plants turn water and carbon dioxide into glucose.

is a type of sugar which plants use for energy.

The gas taken up by plants during photosynthesis is .

The gas released by plants through photosynthesis is .

is a liquid used by plants during photosynthesis.

Plants use energy from for photosynthesis.

Water keeps leaves so that the stomata stay open.

Leaves become and stomata close if there is a water shortage.

Leaves have pores called that allow carbon dioxide in.

OPTIONS

carbon dioxide, flaccid, glucose, oxygen, photosynthesis, stomata, sunlight, turgid, water

Photosynthesis is how plants turn water and carbon dioxide into glucose.
Glucose is a type of sugar which plants use for energy.
The gas taken up by plants during photosynthesis is *carbon dioxide*.
Water is a liquid used by plants during photosynthesis.
Plants use energy from *sunlight* for photosynthesis.
Water keeps leaves *turgid* so that the stomata stay open.
Leaves become *flaccid* and stomata close if there is a water shortage.
Leaves have pores called *stomata* that allow carbon dioxide in.