

Photosynthesis: Leafy's Kitchen in the Sun

Read the story aloud together, then try the activities.

Name _____

Class _____

Date _____

Meera had a little pot of tulsi on her window ledge. Every morning she gave it water and every morning she asked it the same question: "Where does your food come from? You never eat anything!" One morning, the biggest leaf answered. "I'm Leafy," it said. "Come and see my kitchen."

Meera looked closely. "Your kitchen is a leaf?" Leafy laughed. "Every leaf is a tiny kitchen. And like any kitchen, I need ingredients." Down in the pot, the roots were busy drinking up the water Meera had poured. The water travelled up the stem, like juice through a straw, all the way to Leafy.

"Ingredient number two is in the air," said Leafy. On the underside of the leaf were thousands of tiny holes, far too small to see without a microscope. "These are my stomata. They let in a gas called carbon dioxide — the same gas you breathe out." Meera breathed on the leaf. "Thank you!" said Leafy.

"Now I need power to cook," said Leafy, turning towards the window. "Sunlight!" Inside the leaf, a green colouring called chlorophyll caught the sunlight like a solar panel. Using that energy, Leafy mixed the water and the carbon dioxide together and — like magic, but really science — made a kind of sugar called glucose. That sugar was the plant's food.

"Some of my food I use straight away to grow," Leafy explained. "Some I store, in my stem and roots and seeds." Then a little puff came out of the stomata. "And that's the bit I don't need: oxygen. I give it back to the air — for you!" Meera took a deep breath. She was breathing something her tulsi had made.

"So you don't eat soil?" Meera asked. "No," said Leafy. "From the soil I take water and a few minerals that keep me healthy. But my food I cook myself, right here, in the sunshine." Meera smiled and moved the pot to the sunniest spot on the ledge. Leafy's kitchen was open for business.

1. Match each word to its meaning

Write the letter next to each word.

- | | |
|------------------------|--|
| 1. Photosynthesis ____ | A. tiny openings, mostly on the underside of leaves, that let gases in and out. |
| 2. Chlorophyll ____ | B. a gas in the air that plants use and animals breathe out. |
| 3. Stomata ____ | C. the simple sugar a plant makes as food. |
| 4. Carbon dioxide ____ | D. the gas plants give out and we breathe in. |
| 5. Glucose ____ | E. the way green plants make food using sunlight. "Photo" means light; "synthesis" means putting together. |
| 6. Oxygen ____ | F. the green pigment in leaves that captures sunlight. |

2. Complete Leafy's recipe.

_____ + _____ + sunlight energy -> _____ (food) + _____

Word bank: carbon dioxide · glucose · oxygen · water

3. Answer the questions

1. What three things does Leafy need to make food?

2. How does water get from the pot to the leaf?

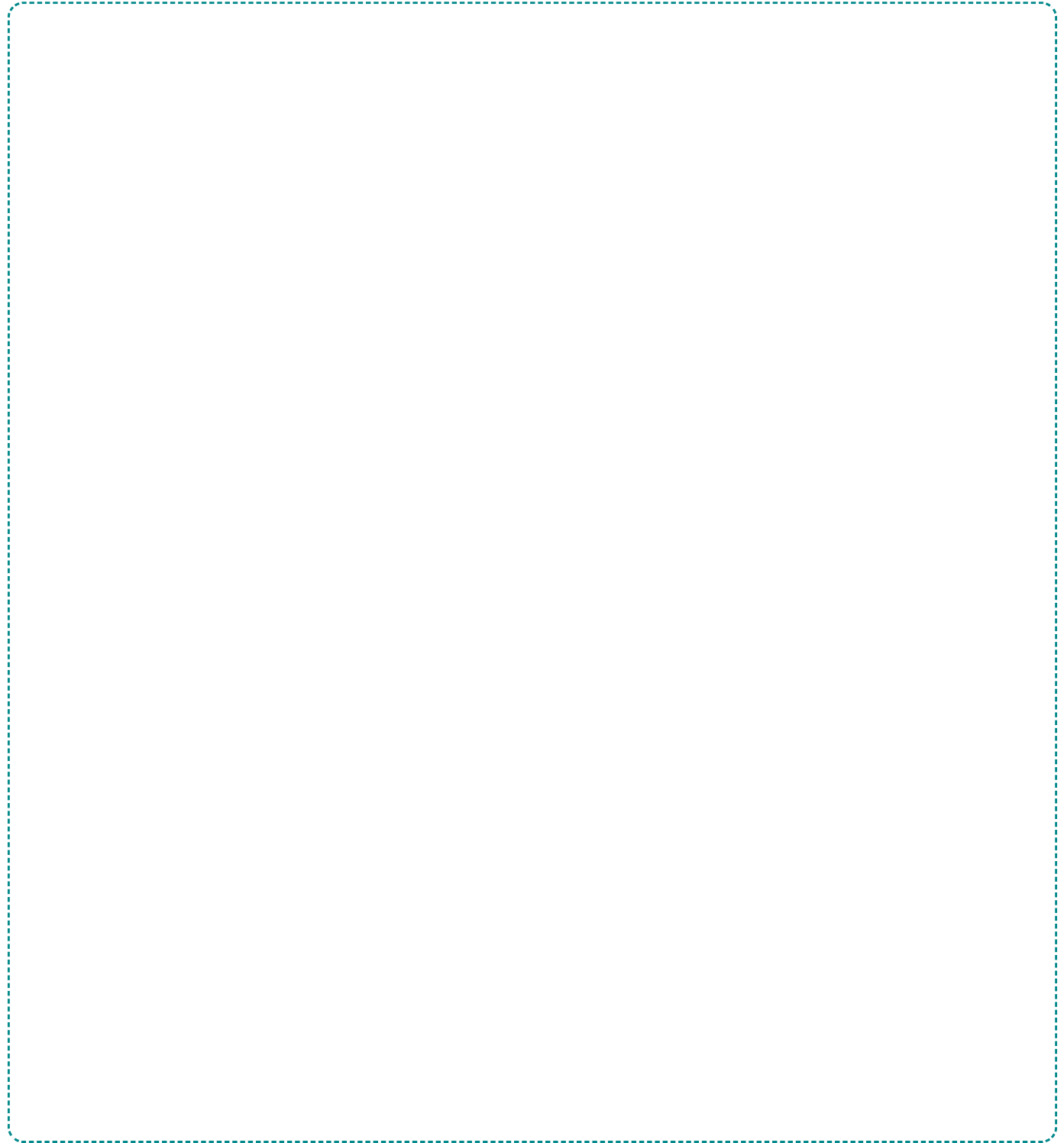
3. What is chlorophyll's job?

4. What does the plant give out that we need?

5. Meera thought plants eat soil. Was she right?

4. Draw and label

Draw a plant in the sun. Label: roots, stem, leaf, sunlight, water, carbon dioxide, oxygen.

A large, empty rectangular area defined by a dashed teal border, intended for a child to draw a plant and label its parts and the process of photosynthesis.

Answer key (for teachers and parents)

On its own page so you can leave it out when printing for children.

1. 1-E 2-F 3-A 4-B 5-C 6-D

2. water, carbon dioxide, glucose, oxygen

3.1 Water, carbon dioxide and sunlight.

3.2 The roots take it up and it travels up the stem.

3.3 It catches sunlight and uses its energy to make food.

3.4 Oxygen.

3.5 No. Plants take water and minerals from the soil, but make their food in their leaves.