

6 Photosynthesis – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	Write it 3 times (English)		
Photosynthesis	_____	_____	_____
energy	_____	_____	_____
chlorophyll	_____	_____	_____
pigment	_____	_____	_____
chloroplasts	_____	_____	_____
starch	_____	_____	_____
cellulose	_____	_____	_____
respiration	_____	_____	_____
sucrose	_____	_____	_____
ions	_____	_____	_____
nitrate	_____	_____	_____
amino acids	_____	_____	_____
magnesium	_____	_____	_____

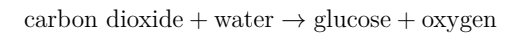
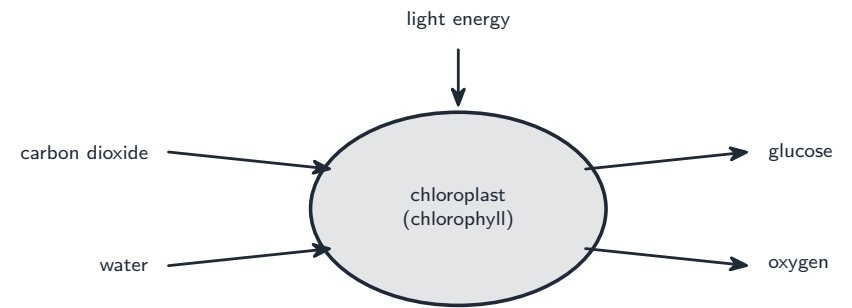
Recall

Plants make their own food. **Photosynthesis** is how they do it, using **energy** from light.

New ideas

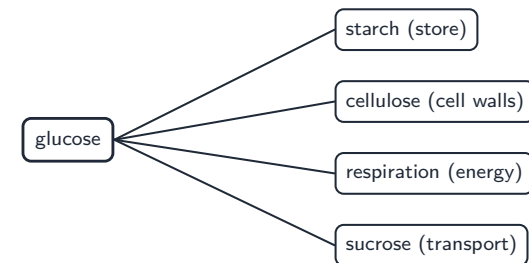
Read these first, then do the Practice.

■ 1 The word equation



The reaction happens only in the light, and only where there is **chlorophyll** – a green **pigment** in the **chloroplasts**.

■ 2 What the plant does with the glucose



- stored as **starch** ;
- built into **cellulose** for cell walls;
- broken down in **respiration** for energy;
- changed to **sucrose** and moved around the plant.

■ 3 Minerals from the soil

Plants also take up mineral **ions** through their roots:

- **nitrate** ions → to make **amino acids** (and proteins);
- **magnesium** ions → to make chlorophyll.

Watch out: photosynthesis needs **light** *and* **chlorophyll** – in the dark, or in a white (non-green) part of a leaf, it cannot happen. The glucose made is used for starch, cellulose, respiration and (as sucrose) transport.

Practice

Try these in order.

6.1 Write the word equation for photosynthesis. [2]

6.2 What two things must be present for photosynthesis to happen? [2]

6.3 Name the green pigment that traps light. [1]

6.4 Give two things a plant does with the glucose it makes. [2]

6.5 Why does a plant need nitrate ions? [1]

6.6 Challenge. A green plant is kept in the dark for two days. Explain why it cannot photosynthesise, and what happens to its store of starch. [2]