

6 Photosynthesis – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)		
Photosynthesis	光合作用	_____	_____	_____
energy	能量	_____	_____	_____
chlorophyll	叶绿素	_____	_____	_____
pigment	色素	_____	_____	_____
chloroplasts	叶绿体	_____	_____	_____
starch	淀粉	_____	_____	_____
cellulose	纤维素	_____	_____	_____
respiration	呼吸作用	_____	_____	_____
sucrose	蔗糖	_____	_____	_____
ions	离子	_____	_____	_____
nitrate	硝酸盐	_____	_____	_____
amino acids	氨基酸	_____	_____	_____
magnesium	镁	_____	_____	_____

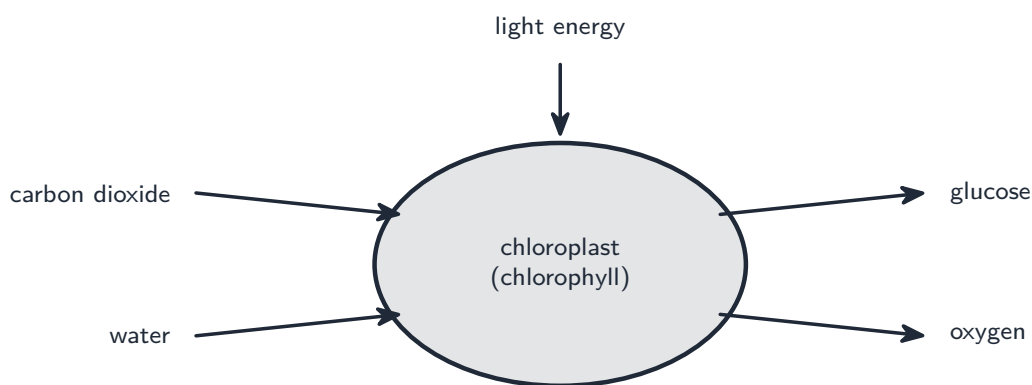
Recall

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

New ideas

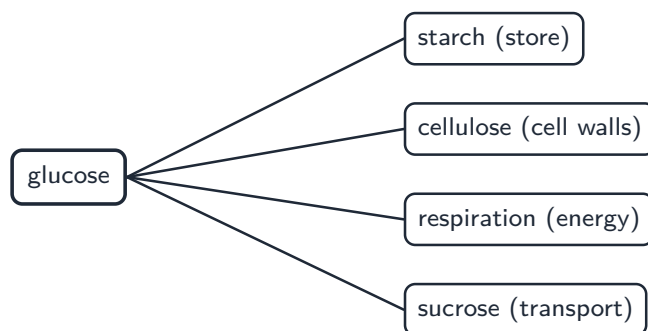
Read these first, then do the Practice.

■ 1 The word equation



The reaction happens only in the light, and only where there is **chlorophyll** 叶绿素 — a green **pigment** 色素 in the **chloroplasts** 叶绿体.

■ 2 What the plant does with the glucose



- stored as **starch** 淀粉;
- built into **cellulose** 纤维素 for cell walls;
- broken down in **respiration** 呼吸作用 for energy;
- changed to **sucrose** 蔗糖 and moved around the plant.

■ 3 Minerals from the soil

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

- **nitrate** 硝酸盐 ions → to make **amino acids** 氨基酸 (and proteins);
- **magnesium** 镁 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]