

# 9C Plants and photosynthesis

## Extension questions

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Answer the following questions:



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- Q1. What do we call a living producer that converts light energy to chemical energy?
- Q2. What process is used by green plants to convert light energy to chemical energy?
- Q3. Name the green substance in a plant that converts light energy to chemical energy
- Q4. Name the tall plant cells in a leaf that are adapted to collect light efficiently?
- Q5. Name the tiny structures in a palisade cell that contain chlorophyll?
- Q6. Name the metallic element in chlorophyll?
- Q7. Name the minerals needed by the reactions used in photosynthesis and respiration?
- Q8. Name a mineral needed for making amino acids and proteins?
- Q9. What do we call chemicals added to the soil in order to ensure healthy plant growth?
- Q10. What do we call chemical ions needed for healthy plant growth?
- Q11. Name an underground plant organ that takes up water and minerals from the soil?
- Q12. Name a specialised cell on a root that has a large surface area for efficient absorption of water and minerals?
- Q13. Name a plant organ that stores energy underground for at least one new bud?
- Q14. Name the flat, green organ adapted to collect as much light as possible to make food for the plant?
- Q15. What is the principal root called?

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### Answers:

- A1. A plant
- A2. Photosynthesis
- A3. Chlorophyll
- A4. Palisade cells
- A5. Chloroplasts
- A6. Magnesium
- A7. Potassium and phosphates
- A8. Nitrate
- A9. Fertilisers
- A10. Minerals
- A11. Root
- A12. A root hair
- A13. A bulb
- A14. A leaf
- A15. The tap root

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multiple choice

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1: Plant root hair cells do not photosynthesize because ?

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- A They lack a nucleus
  - B They lack a cell membrane
  - C They lack chloroplasts
  - D They lack a cell wall
- 

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2: Which process increases plant biomass over time ?

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- A Respiration
  - B Photosynthesis
  - C Cell division
  - D Transpiration
- 

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3: What two materials are used by green leaves during photosynthesis ?

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- A Minerals and vitamins
  - B Glucose and oxygen
  - C Carbon dioxide and water
  - D Water and minerals
- 

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4: What two factors alter the rate of photosynthesis in green plants ?

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- A Wind speed and soil moisture
  - B Temperature and time of day
  - C Light levels and temperature
  - D Oxygen levels and humidity
-

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## literacy in science

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Answer all the questions below:



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1) Unscramble the following words:

phhesntotosyis

olucesg

eoxgyn

csrhta

2) Make three sentences using the following nine words or phrases:

palisade cell

leaves

glucose in plants

chloroplast

adapted

used to make

photosynthesis

glucose and oxygen

other materials

3) Match the word or phrase with the right meaning:

Starch



The destruction of woods and forests on a large scale

Transpiration



A carbohydrate made from many glucose molecules

Deforestation



The movement of water through the plant

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## complete the sentence

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Place the right word or words to complete the sentence:

 [Click mouse to reveal answer](#)

global

water

presence

minerals

leaf

corn

own

nitrites

respiration

- a) Green plants are able to make their \_\_\_\_\_ food by photosynthesis.
- b) Plants obtain the \_\_\_\_\_ they need from roots, which have millions of tiny root hair cells.
- c) Leaves can be tested for the \_\_\_\_\_ of starch by using the iodine test.
- d) Roots are adapted to take in \_\_\_\_\_ and water from the soil.
- e) Sugar is transported from the \_\_\_\_\_ around the plant by phloem tissue.
- f) Glucose in plants is used for \_\_\_\_\_ and to make starch, fats and proteins.
- g) Over the summer crops like \_\_\_\_\_ and wheat will increase their biomass.
- h) Plants take in minerals like \_\_\_\_\_ from the soil by active transport.
- i) Destroying forests contributes to \_\_\_\_\_ warming and greenhouse gases.

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## complete the sentence

Place the right word or words to complete the sentence:

global

water

presence

minerals

leaf

corn

own

nitrates

respiration

- a) Green plants are able to make their own food by photosynthesis.
- b) Plants obtain the water they need from roots, which have millions of tiny root hair cells.
- c) Leaves can be tested for the presence of starch by using the iodine test.
- d) Roots are adapted to take in minerals and water from the soil.
- e) Sugar is transported from the leaf around the plant by phloem tissue.
- f) Glucose in plants is used for respiration and to make starch, fats and proteins.
- g) Over the summer crops like corn and wheat will increase their biomass.
- h) Plants take in minerals like nitrates from the soil by active transport.
- i) Destroying forests contributes to global warming and greenhouse gases.