

Photosynthesis Quiz

Ten questions on the whole series. Answer them all, then turn the page round to check.

1 Which gas do plants take in from the air for photosynthesis?

- ☐ A Oxygen ☐ B Nitrogen
☐ C Carbon dioxide ☐ D Hydrogen

2 Which is the balanced symbol equation for photosynthesis?

- ☐ A $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$ ☐ B $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$
☐ C $\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2$ ☐ D $6\text{CO}_2 + 6\text{O}_2 \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{H}_2\text{O}$

3 In which layer of a leaf does most photosynthesis happen?

- ☐ A Upper epidermis ☐ B Palisade mesophyll
☐ C Spongy mesophyll ☐ D Phloem

4 What do guard cells do?

- ☐ A Carry water up the plant ☐ B Open and close the stomata
☐ C Store starch ☐ D Make chlorophyll

5 Where does the oxygen released by photosynthesis come from?

- ☐ A Carbon dioxide ☐ B Glucose
☐ C Water ☐ D The soil

6 Pondweed makes bubbles faster as a lamp gets brighter, then the rate levels off. Why?

- ☐ A Light is still limiting ☐ B Another factor is now limiting
☐ C The plant stops respiring ☐ D The chlorophyll is used up

7 A lamp is moved from 10 cm to 20 cm away from a plant. What happens to the light intensity?

- ☐ A It halves ☐ B It falls to a quarter
☐ C It doubles ☐ D It stays the same

8 When do plants respire?

- ☐ A Only at night ☐ B Only in the light
☐ C All the time ☐ D Never: only animals respire

9 Which product made from glucose strengthens plant cell walls?

- ☐ A Starch ☐ B Cellulose
☐ C Oil ☐ D Amino acids

10 Who showed in 1779 that plants need light to 'restore' air?

- ☐ A Joseph Priestley ☐ B Jan Baptist van Helmont
☐ C Jan Ingenhousz ☐ D Melvin Calvin

ANSWERS

1. C: Carbon dioxide
 2. A: $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$ (B is aerobic respiration)
 3. B: Palisade mesophyll
 4. B: Open and close the stomata
 5. C: Water (known with an oxygen isotope tracer in 1941)
 6. B: Another factor, such as CO_2 or temperature, is now limiting
 7. B: It falls to a quarter ($1 + 2^2 = 10$)
 8. C: All the time, day and night
 9. B: Cellulose
 10. C: Jan Ingenhousz

SERIES COMPLETE

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