

Science

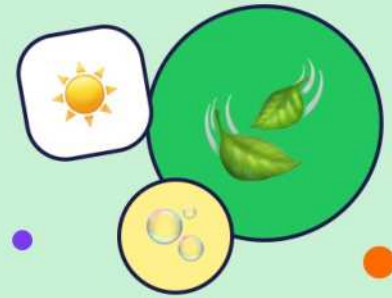
Grade 8

# Photosynthesis

Find out how plants turn light, water and carbon dioxide into food.

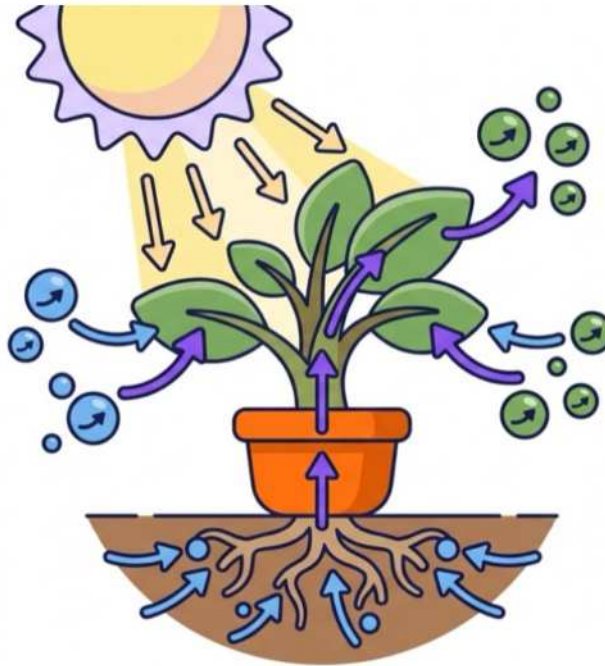


I can write the word equation for photosynthesis and explain the factors that affect it.



## 1 Fill the gaps

Use the word bank to complete each sentence.

**WORD BANK**

chlorophyll

chloroplasts

roots

stomata

water

1. carbon dioxide + \_\_\_\_\_ → glucose + oxygen
2. Photosynthesis happens in the \_\_\_\_\_.
3. The green pigment that absorbs light is \_\_\_\_\_.
4. Water enters the plant through the \_\_\_\_\_.
5. Gas exchange happens through tiny holes called \_\_\_\_\_.

## 2 Sort it

Write each word in the right box.

glucose

carbon dioxide

water

light

oxygen

Needed (reactants)

Produced (products)

## 3 True or false

Circle true or false.

1. Plants make oxygen during photosynthesis.
2. Photosynthesis happens mostly at night.
3. More light can increase the rate of photosynthesis.

True

False

True

False

True

False

## 4 Photosynthesis quiz

Circle the right answer.

1. Which gas do plants take in for photosynthesis?

A oxygen

B carbon dioxide

C nitrogen

2. What happens to the glucose made in the leaves?

A it is used in respiration or stored as starch

B it turns into water

C it is released into the air

3. Which solution turns blue-black when starch is present?

A limewater

B salt water

C iodine solution

4. Why are most leaves thin and wide?

**A** to catch lots of light and let gases in and out easily

**B** to store water

**C** to make the plant heavier

### 5 Inside a leaf

Draw a line to match each pair.

☐ Palisade cells •

☐ Guard cells •

☐ Xylem •

☐ Phloem •

• **A.** carries sugars around the plant

• **B.** open and close the stomata

• **C.** are packed with chloroplasts near the top of the leaf

• **D.** carries water up from the roots

### 6 Bubble rate

An aquatic plant was tested with a lamp. Work out the rate: bubbles ÷ time.

| Lamp distance | Bubbles counted | Time (min) | Bubbles per minute |
|---------------|-----------------|------------|--------------------|
| 10 cm         | 120             | 2          |                    |
| 20 cm         | 90              | 3          |                    |
| 40 cm         | 60              | 4          |                    |
| 80 cm         | 20              | 5          |                    |

7

**Testing a leaf for starch**

Number the boxes to put them in the right order.

☐

Add a few drops of iodine solution.

☐

Put the leaf in boiling water for about one minute.

☐

Blue-black areas show that starch is present.

☐

Put the leaf in warm ethanol, heated in a water bath, to remove the chlorophyll.

☐

Rinse the leaf in warm water to soften it.

8

**Faster or slower?**

Compare the rate of photosynthesis in each pair. Everything else is the same. Write > or <.

**bright light****dim light****2 °C****25 °C****little CO<sub>2</sub>****a lot of CO<sub>2</sub>****dark  
cupboard****sunny  
windowsill**

9

**Think and write**

An aquatic plant gives off more bubbles when a lamp is moved closer. Explain why.

---

---

---

---

How did it go?



Made with **GradeAid**

Science

Grade 8

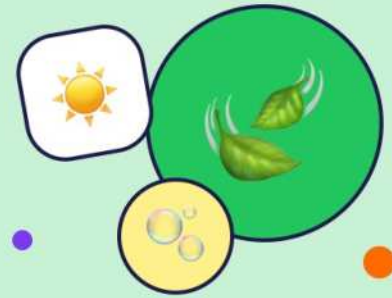
Answer key

# Photosynthesis

Find out how plants turn light, water and carbon dioxide into food.

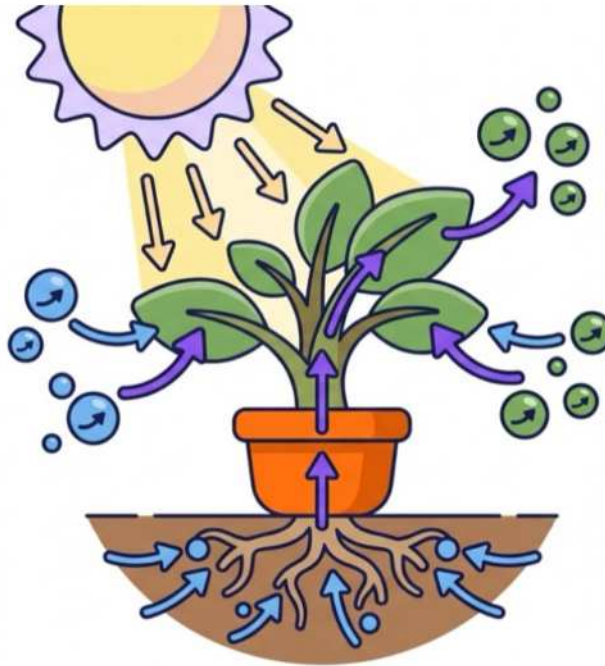


I can write the word equation for photosynthesis and explain the factors that affect it.



## 1 🌱 Fill the gaps

Use the word bank to complete each sentence.



### WORD BANK

chlorophyll

chloroplasts

roots

stomata

water

1. carbon dioxide + water → glucose + oxygen
2. Photosynthesis happens in the chloroplasts.
3. The green pigment that absorbs light is chlorophyll.
4. Water enters the plant through the roots.
5. Gas exchange happens through tiny holes called stomata.

## 2 Sort it

Write each word in the right box.

glucose

carbon dioxide

water

light

oxygen

### Needed (reactants)

light, water, carbon dioxide

### Produced (products)

glucose, oxygen

## 3 True or false

Circle true or false.

1. Plants make oxygen during photosynthesis.
2. Photosynthesis happens mostly at night.
3. More light can increase the rate of photosynthesis.

True

False

True

False

True

False

## 4 Photosynthesis quiz

Circle the right answer.

1. Which gas do plants take in for photosynthesis?

A oxygen

B carbon dioxide

C nitrogen

2. What happens to the glucose made in the leaves?

A it is used in respiration or stored as starch

B it turns into water

C it is released into the air

3. Which solution turns blue-black when starch is present?

A limewater

B salt water

C iodine solution

4. Why are most leaves thin and wide?

**A** to catch lots of light and let gases in and out easily

**B** to store water

**C** to make the plant heavier

### 5 Inside a leaf

Draw a line to match each pair.

**C** Palisade cells •

**B** Guard cells •

**D** Xylem •

**A** Phloem •

• **A.** carries sugars around the plant

• **B.** open and close the stomata

• **C.** are packed with chloroplasts near the top of the leaf

• **D.** carries water up from the roots

### 6 Bubble rate

An aquatic plant was tested with a lamp. Work out the rate: bubbles ÷ time.

| Lamp distance | Bubbles counted | Time (min) | Bubbles per minute |
|---------------|-----------------|------------|--------------------|
| 10 cm         | 120             | 2          | 60                 |
| 20 cm         | 90              | 3          | 30                 |
| 40 cm         | 60              | 4          | 15                 |
| 80 cm         | 20              | 5          | 4                  |

## 7 Testing a leaf for starch

Number the boxes to put them in the right order.

- 4 Add a few drops of iodine solution.
- 1 Put the leaf in boiling water for about one minute.
- 5 Blue-black areas show that starch is present.
- 2 Put the leaf in warm ethanol, heated in a water bath, to remove the chlorophyll.
- 3 Rinse the leaf in warm water to soften it.

## 8 Faster or slower?

Compare the rate of photosynthesis in each pair. Everything else is the same. Write > or <.

bright light

>

dim light

2 °C

<

25 °C

little CO<sub>2</sub>

<

a lot of CO<sub>2</sub>

dark  
cupboard

<

sunny  
windowsill

## 9 Think and write

An aquatic plant gives off more bubbles when a lamp is moved closer. Explain why.

---

---

---

---

How did it go?



Made with **GradeAid**