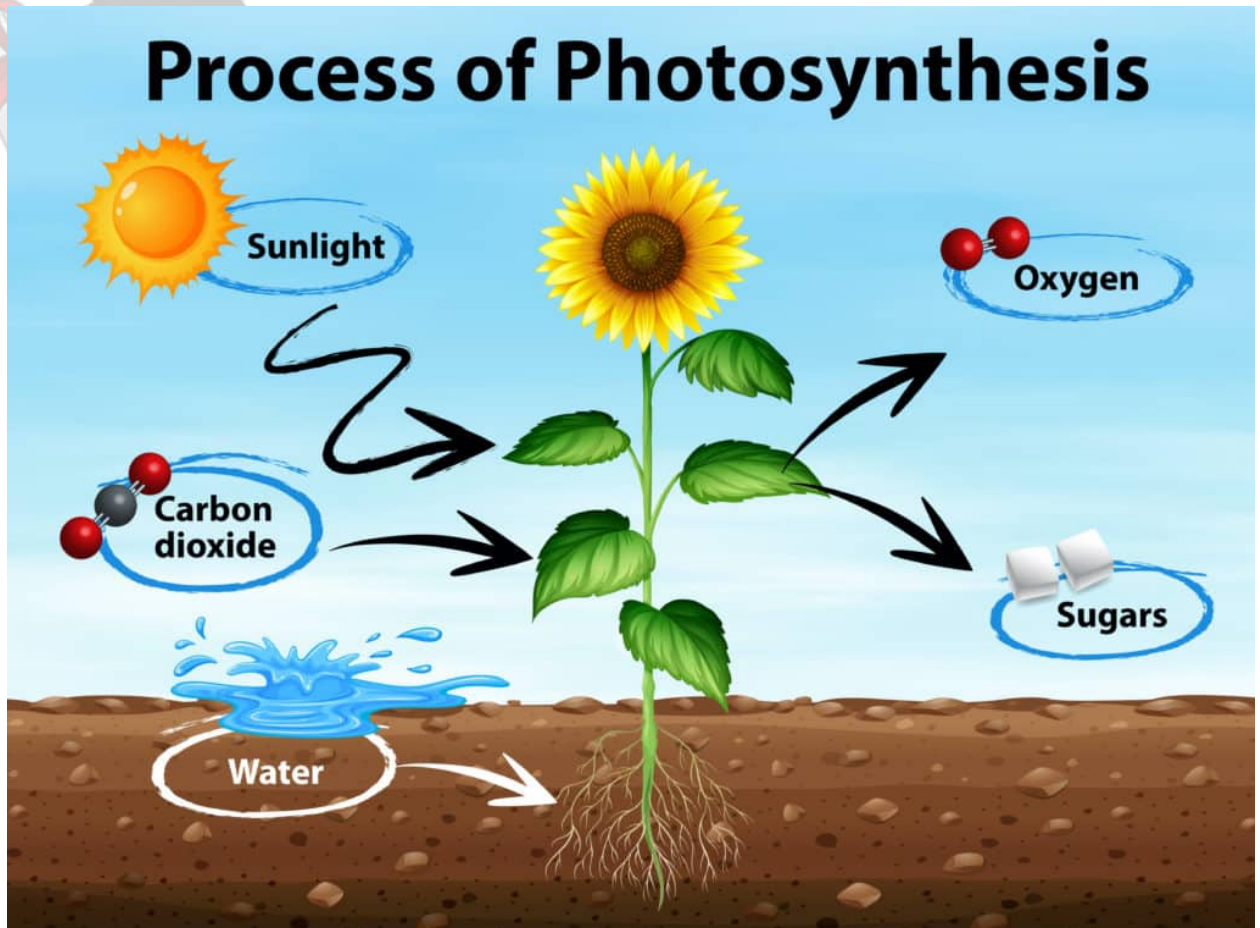


## A. Photosynthesis

### Photosynthesis - The Amazing Process of Energy Production

Welcome to the magical world of photosynthesis, where plants work their wonders to create food and oxygen for all living beings! Photosynthesis is like a green superhero that keeps our planet thriving and full of life. Let's embark on this



incredible journey to learn all about this essential process.

#### What is Photosynthesis?

Photosynthesis is a special process that takes place in green plants and some algae. It's like a factory inside plants where they use sunlight, water, and carbon dioxide from the air to make food. This incredible process helps sustain life on Earth.

#### The Photosynthesis Recipe

To cook up their food, plants need some key ingredients:

### **1. Sunlight**

Plants use sunlight as their magical ingredient. They absorb sunlight through their leaves and turn it into energy.

### **2. Water**

Plants drink water from the soil through their roots. This water travels up the plant's stem and reaches the leaves.

### **3. Carbon Dioxide**

Plants breathe in carbon dioxide, which is a gas present in the air. They take it in through tiny holes called stomata on their leaves.

### **Chlorophyll - The Green Chef**

Inside the leaves, there's a green pigment called chlorophyll. Think of it as the green chef of the plant factory. Chlorophyll captures the sunlight and works its magic to convert it into energy.

### **The Photosynthesis Process**

Now that we have all the ingredients, let's follow the steps of photosynthesis:

#### **1. Absorbing Sunlight**

The plant's leaves absorb sunlight from the sun.

#### **2. Water Traveling Up**

Water travels up the plant's stem and reaches the leaves.

#### **3. Breathing Carbon Dioxide**

Carbon dioxide enters the plant through tiny holes called stomata on the leaves.

#### **4. Making Food**

With sunlight, water, and carbon dioxide ready, the plant mixes them together. Chlorophyll in the leaves works its magic, turning these ingredients into glucose, a type of sugar. Glucose is the plant's food!

#### **5. Releasing Oxygen**

During this process, plants release a magical byproduct called oxygen. It's the same oxygen that we, animals, and other living beings breathe to survive.

### **The Importance of Photosynthesis**

Photosynthesis is a superheroic process because it keeps our planet balanced. Plants produce their food through photosynthesis, and they are the foundation of all food chains. They are like chefs, feeding herbivores like rabbits and deer. Herbivores, in turn, become food for carnivores like lions and wolves. Without photosynthesis, the food chain would collapse, and life would not be possible as we know it.

### **Humans and Photosynthesis**

Photosynthesis is not just for plants; humans benefit too! When we eat fruits and vegetables, we consume the glucose that plants produce through photosynthesis. So, in a way, plants share their energy and goodness with us.

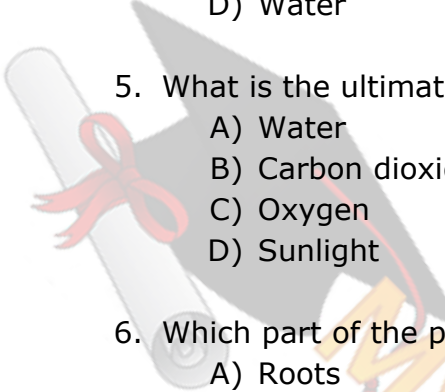
### **Plants as Air Purifiers**

Remember the magical byproduct, oxygen? It's not just for us; it's vital for all living beings. Plants release oxygen during photosynthesis, purifying the air we breathe. They help maintain a healthy balance of gases in the atmosphere, making Earth a comfortable place to live.

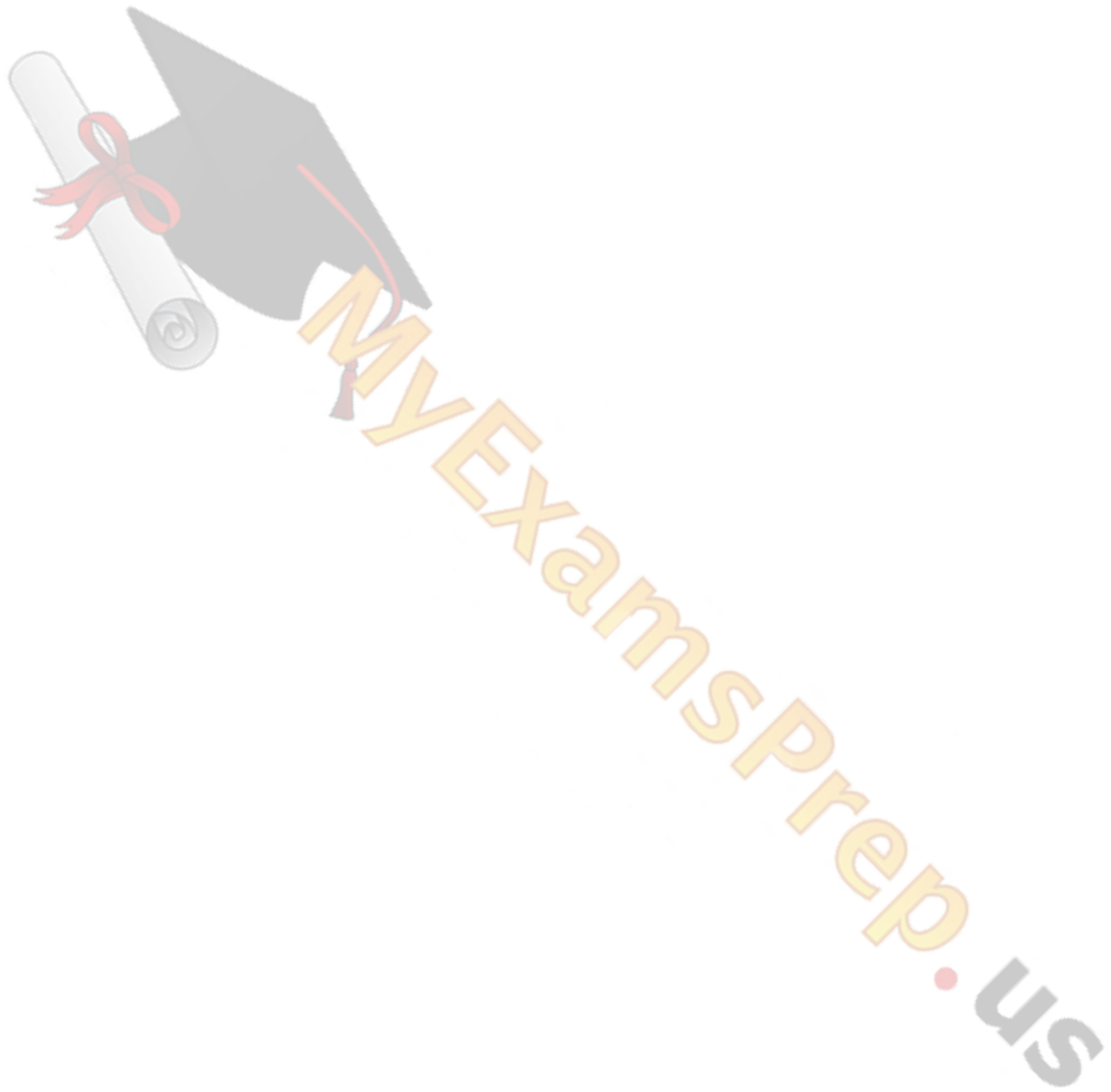
### **The Sun, the Ultimate Source**

Photosynthesis would be impossible without our mighty Sun. The Sun provides the essential sunlight that powers this amazing process. So, in a way, the Sun is like a distant chef, preparing energy for plants to cook their food.

1. What is photosynthesis?
  - A) A process used by humans to store energy
  - B) A special process that takes place in green plants and some algae, turning sunlight, water, and carbon dioxide into food.
  - C) A factory inside plants where they use sunlight, water, and oxygen to make food.
  - D) A process that occurs only in animals.
2. What is the green pigment inside leaves that captures sunlight?
  - A) Glucose
  - B) Stomata
  - C) Chlorophyll
  - D) Oxygen
3. Which of the following is NOT an ingredient needed for photosynthesis?
  - A) Sunlight
  - B) Water
  - C) Carbon dioxide
  - D) Soil

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4. What is the magical byproduct of photosynthesis that plants release?
- A) Carbon dioxide
  - B) Glucose
  - C) Oxygen
  - D) Water
5. What is the ultimate source of energy for photosynthesis?
- A) Water
  - B) Carbon dioxide
  - C) Oxygen
  - D) Sunlight
6. Which part of the plant absorbs sunlight during photosynthesis?
- A) Roots
  - B) Stems
  - C) Leaves
  - D) Flowers
7. What is the main product of photosynthesis, which serves as the plant's food?
- A) Carbon dioxide
  - B) Glucose
  - C) Oxygen
  - D) Water
8. Why is photosynthesis important for life on Earth?
- A) It provides oxygen for animals to breathe and produces food for plants and balances the food chain.
  - B) It creates sunlight for plants to grow.
  - C) It provides food for animals
  - D) It converts water into glucose.
9. How do humans benefit from photosynthesis?
- A) By getting water and sunlight for survival.
  - B) By consuming the glucose produced by plants.
  - C) By breathing out carbon dioxide for plants.
  - D) By producing oxygen for plants.
10. What happens when there's no photosynthesis?
- A) The Sun becomes weak.
  - B) The food chain collapses, and life as we know it would not be possible
  - C) The global temperature drops

D) Oxygen levels in the atmosphere decrease.



## ANSWERS & EXPLANATIONS

1. B) A special process that takes place in green plants and some algae, turning sunlight, water, and carbon dioxide into food.
  - Photosynthesis is a special process in green plants and some algae, converting sunlight, water, and carbon dioxide into food.
2. C) Chlorophyll
  - Chlorophyll is the green pigment inside leaves that captures sunlight during photosynthesis.
3. D) Soil
  - While plants need soil for nutrients, it is not an ingredient needed for photosynthesis. The essential ingredients are sunlight, water, and carbon dioxide.
4. C) Oxygen
  - Oxygen is the magical byproduct of photosynthesis that plants release, which is essential for all living beings.
5. D) Sunlight
  - The ultimate source of energy for photosynthesis is sunlight.
6. C) Leaves
  - Leaves are the part of the plant that absorbs sunlight during photosynthesis.
7. B) Glucose
  - The main product of photosynthesis is glucose, a type of sugar that serves as the plant's food.
8. C) It produces food for plants and balances the food chain.
  - Photosynthesis is important because it produces food for plants and plays a crucial role in balancing the food chain.
9. B) By consuming the glucose produced by plants.
  - Humans benefit from photosynthesis by consuming the glucose produced by plants when we eat fruits and vegetables.
10. B) The food chain collapses, and life as we know it would not be possible.

- Without photosynthesis, the food chain would collapse, and life as we know it would not be possible because plants are the foundation of all food chains.

