

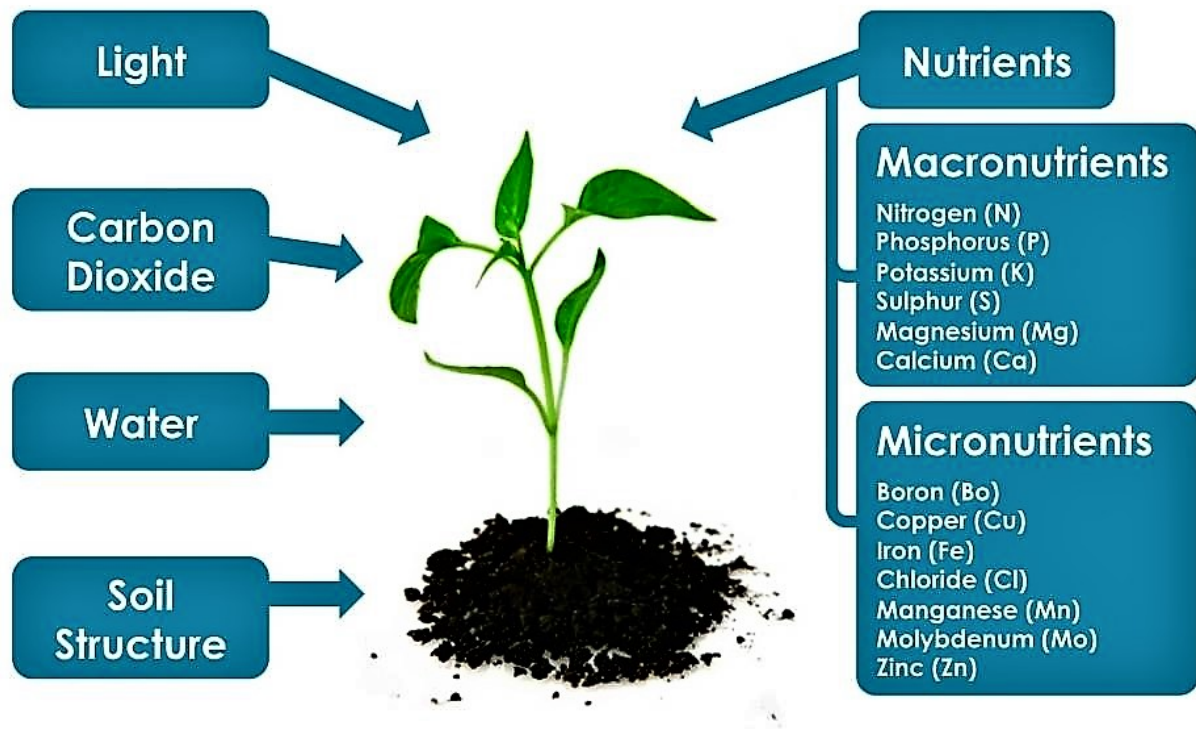
## B2. Nutrients in Soil

### Nutrients in Soil

Have you ever wondered how plants grow big and strong, providing us with tasty fruits and colorful flowers? Well, one of the secrets lies in the magic of soil nutrients! Let's dive into the wonderful world of nutrients in soil and discover their importance for all living things.

#### What are Soil Nutrients?

Soil nutrients are special substances found in the soil that plants need to grow and thrive. Just like we need different vitamins and minerals to stay healthy, plants also need specific nutrients to grow tall and strong. There are three main types of nutrients that plants crave: primary nutrients, secondary nutrients, and micronutrients.



### The Three Types of Nutrients

#### 1. Primary Nutrients

- a. Nitrogen (N): Nitrogen is like plant food for growth and helps plants produce green leaves.
- b. Phosphorus (P): Phosphorus is essential for strong roots, flowers, and fruits.
- c. Potassium (K): Potassium helps plants resist diseases and stay healthy.

#### 2. Secondary Nutrients

- a. Calcium (Ca): Calcium helps build strong cell walls in plants.
- b. Magnesium (Mg): Magnesium helps plants make food through photosynthesis.
- c. Sulfur (S): Sulfur helps with the formation of plant proteins.

### 3. Micronutrients

- a. Iron (Fe)
- b. Zinc (Zn)
- c. Copper (Cu)
- d. Chlorine (Cl)
- e. Manganese (Mn)
- f. Boron (B)
- g. Molybdenum (Mo)

These are just as important, but plants need them in smaller quantities compared to primary and secondary nutrients.

### How do Plants Get Nutrients?

Plants cannot simply go to the store to buy nutrients, so they have a special way of getting what they need. Their roots play a vital role in this process! Roots are like tiny straws that absorb water and nutrients from the soil. Once inside the plant, the nutrients travel through special tubes called xylem, all the way to the leaves, stems, flowers, and fruits. This incredible journey helps plants grow and stay healthy!

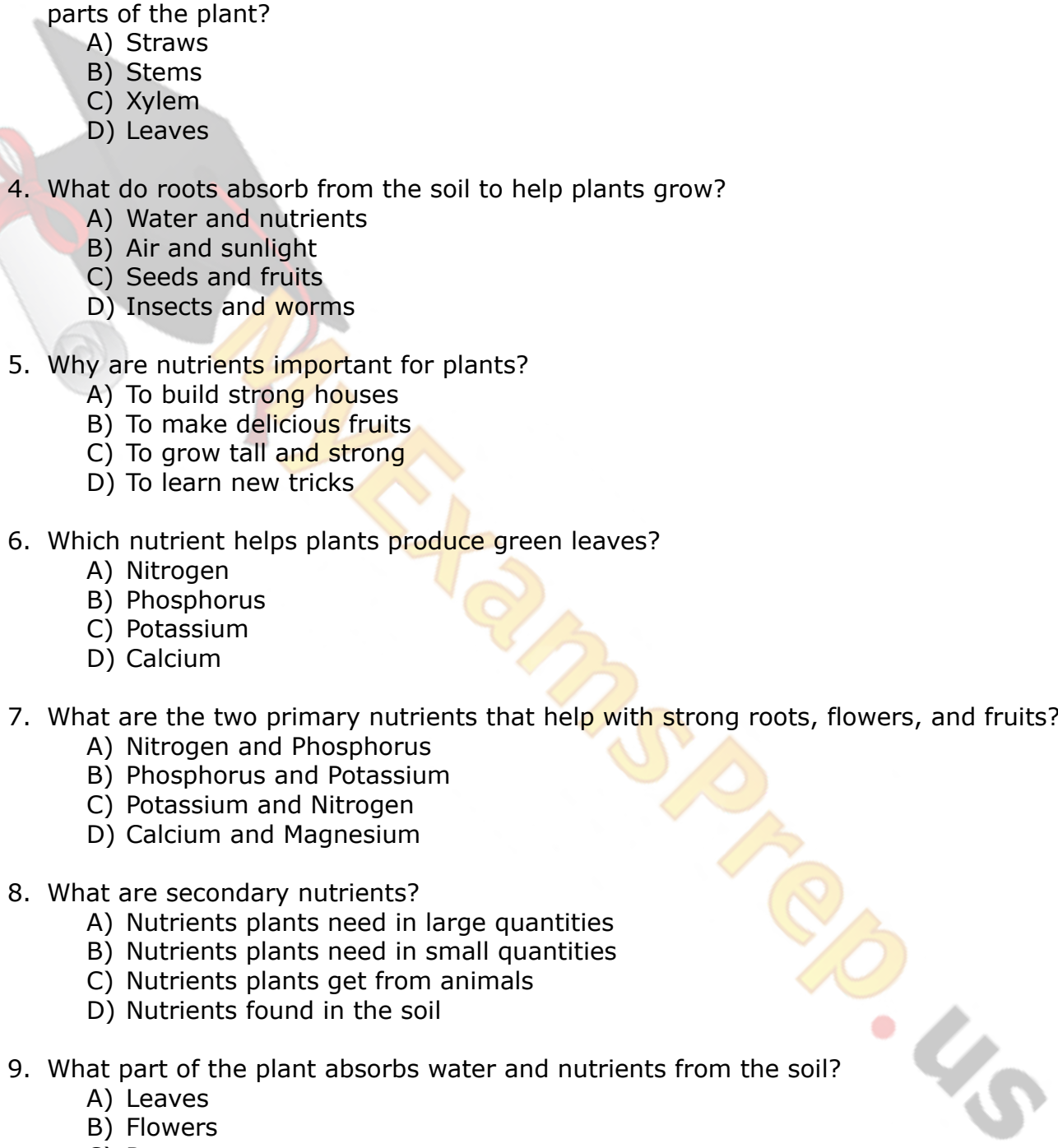
### Nutrients and the Food Chain

The magic of nutrients doesn't stop with plants. When animals eat plants, they also get the essential nutrients the plants absorb from the soil. And guess what? We humans are a part of this food chain too! When we enjoy delicious fruits and veggies, we also benefit from the nutrients that come from the soil.

### Keeping Soil Nutrient-Rich

To keep soil nutrient-rich and plants healthy, farmers and gardeners use special tricks. They add natural fertilizers like compost and manure to the soil. These fertilizers are like superhero snacks for plants, providing them with all the nutrients they need to grow big and strong. It's like giving plants a delicious and nutritious meal!]

1. What are the three main types of nutrients that plants need?
  - A) Calcium, Magnesium, Iron
  - B) Nitrogen, Phosphorus, Potassium
  - C) Sulfur, Zinc, Boron
  - D) Chlorine, Copper, Manganese
2. Which nutrient helps plants resist diseases and stay healthy?
  - A) Nitrogen

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- B) Phosphorus
  - C) Potassium
  - D) Calcium
3. What are the tiny tubes inside a plant that carry nutrients from the roots to other parts of the plant?
- A) Straws
  - B) Stems
  - C) Xylem
  - D) Leaves
4. What do roots absorb from the soil to help plants grow?
- A) Water and nutrients
  - B) Air and sunlight
  - C) Seeds and fruits
  - D) Insects and worms
5. Why are nutrients important for plants?
- A) To build strong houses
  - B) To make delicious fruits
  - C) To grow tall and strong
  - D) To learn new tricks
6. Which nutrient helps plants produce green leaves?
- A) Nitrogen
  - B) Phosphorus
  - C) Potassium
  - D) Calcium
7. What are the two primary nutrients that help with strong roots, flowers, and fruits?
- A) Nitrogen and Phosphorus
  - B) Phosphorus and Potassium
  - C) Potassium and Nitrogen
  - D) Calcium and Magnesium
8. What are secondary nutrients?
- A) Nutrients plants need in large quantities
  - B) Nutrients plants need in small quantities
  - C) Nutrients plants get from animals
  - D) Nutrients found in the soil
9. What part of the plant absorbs water and nutrients from the soil?
- A) Leaves
  - B) Flowers
  - C) Roots
  - D) Stems
10. What do farmers and gardeners add to the soil to keep it nutrient-rich?
- A) Plants
  - B) Animals
  - C) Water
  - D) Fertilizers

## ANSWERS & EXPLANATIONS

1. B) Nitrogen, Phosphorus, Potassium
  - a. These are the three main types of nutrients that plants need for healthy growth.
2. C) Potassium
  - a. Potassium helps plants resist diseases and stay healthy.
3. C) Xylem
  - a. Xylem is like tiny tubes inside a plant that carry nutrients from the roots to other parts of the plant.
4. A) Water and nutrients
  - a. Roots absorb water and nutrients from the soil to help plants grow.
5. C) To grow tall and strong
  - a. Nutrients are important for plants to grow tall and strong, just like how we need good food to stay healthy.
6. A) Nitrogen
  - a. Nitrogen is the nutrient that helps plants produce green leaves.
7. B) Phosphorus and Potassium
  - a. Phosphorus and Potassium are the two primary nutrients that help with strong roots, flowers, and fruits.
8. B) Nutrients plants need in small quantities
  - a. Secondary nutrients are nutrients that plants need in smaller quantities compared to primary nutrients.
9. C) Roots
  - a. Roots absorb water and nutrients from the soil to help plants grow.
- 10.D) Fertilizers
  - a. Farmers and gardeners add fertilizers to the soil to keep it nutrient-rich and provide plants with the nutrients they need to grow healthy and strong.