

## Topic 4 Study Guide - Plants

### **1. Introduction to Plants:**

- Definition: Plants are living organisms that can make their own food through a process called photosynthesis.
- Key characteristics: Have roots, stems, leaves, and produce flowers and seeds.

### **2. Parts of a Plant:**

- **Roots:**
  - Function: Anchor the plant and absorb water and nutrients from the soil.
  - Examples: Carrots, radishes.
- **Stems:**
  - Function: Support the plant and transport water, nutrients, and food.
  - Examples: Celery, asparagus.
- **Leaves:**
  - Function: Site of photosynthesis, where plants make their own food.
  - Examples: Spinach, lettuce.
- **Flowers:**
  - Function: Reproduction, attracting pollinators (bees, butterflies).
  - Examples: Roses, sunflowers.
- **Seeds:**
  - Function: New plant formation.
  - Examples: Sunflower seeds, peas.

### **3. Photosynthesis:**

- Definition: The process by which plants make their own food using sunlight, carbon dioxide, and water.
- Equation: Sunlight + Carbon Dioxide + Water → Oxygen + Glucose (Sugar).

### **4. Life Cycle of Plants:**

- **Seed Germination:**
  - Planting a seed and the conditions required for germination.
  - Observation: Growth of roots and shoots.
- **Growth and Development:**
  - Factors affecting plant growth (light, water, nutrients).
  - Measuring plant growth over time.
- **Reproduction:**
  - Pollination and fertilization.
  - Seed formation and dispersal.

## **5. Importance of Plants:**

- Oxygen production during photosynthesis.
- Food source for humans and animals.
- Habitat for many living organisms.

## **Plant Reproduction**

### **1. Making Seeds:**

- Just like animals have babies, plants have a way to make new plants. They do this by making seeds.

### **2. Parts of a Flower:**

- Plants have special parts called flowers. Flowers have different parts like petals, a stem, and inside, tiny things called pollen.

### **3. Pollination:**

- Pollination is like a plant's way of sending invitations to a party! Pollen from the male part (anther) of one flower travels to the female part (stigma) of another flower. This can happen with the help of wind, insects like bees, or butterflies.

### **4. Baby Plant Inside the Seed:**

- After the pollen and the female part of a flower meet, a seed starts to form. Inside the seed, there's a tiny baby plant waiting to grow.

### **5. Planting the Seed:**

- When a seed is ready, it needs a good place to grow. We can plant the seed in soil, give it water and sunlight, and watch it grow into a new plant.

### **6. Growing New Plants:**

- The tiny baby plant inside the seed starts to grow roots into the soil and a stem towards the sunlight. Soon, leaves pop out, and a new plant is born!