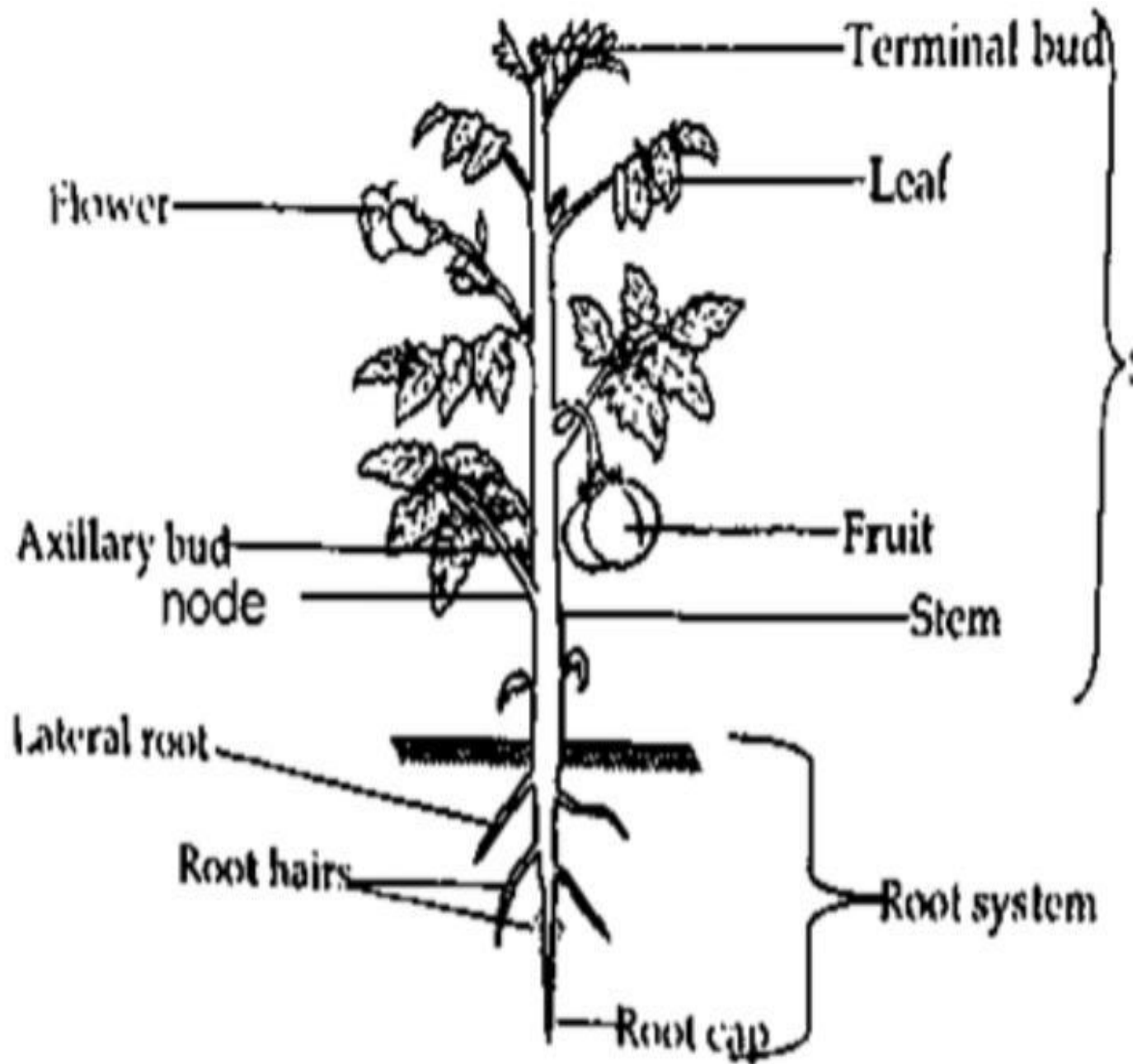


## P.6 SCIENCE ZOOM LESSON 5

### PARTS OF A FLOWERING PLANT



## SYSTEMS OF A FLOWERING PLANT

- Shoot system
- Root system

### SHOOT SYSTEM

This is the system of a plant that grows above the ground.

- It consists of;
- the stem,
- leaves
- lateral/axillary bud,
  - terminal bud
  - flowers
  - fruits nodes
  - internodes

### ROOT SYSTEM

This is the part of a plant that grows below the soil.

It consists of;

- main (tap root)
- root hairs
- lateral root
- root cap

## TYPES OF ROOT SYSTEMS

- Fibrous root system
- Tap root system

## TAP ROOT SYSTEM

This is where the radicle forms a main (tap) root. with lateral roots

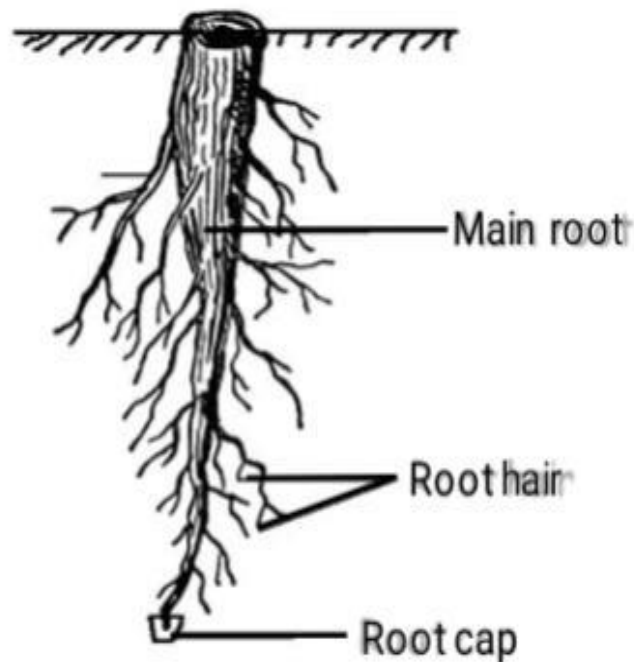
- It is found in dicotyledonous plants

## Examples of plants with tap root system

- Bean plant
- Soybeans (soya beans)
- Peas
- Groundnuts
- Mango
- Orange

- Cassava
- Paw paw plant
- Avocado plant
- Jack fruit plant

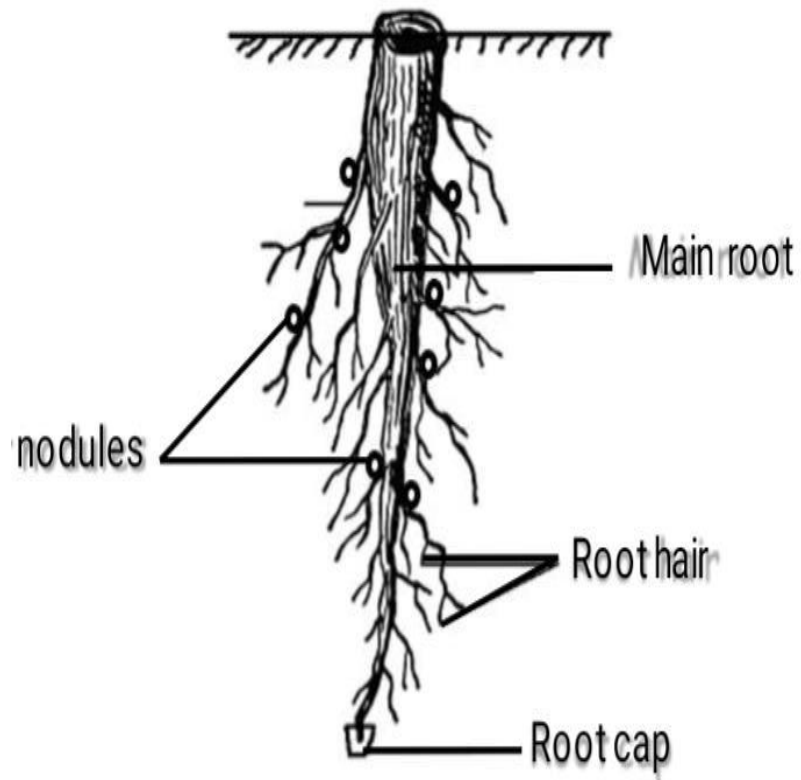
## Structure of a tap root system



A diagram showing the tap root system of legumes (e.g bean plant or cow peas)

- Main root
- Root nodules

- Root hair



## FUNCTIONS OF THE PARTS

- **Main root**

- ✓ To hold the plant firmly in the soil.
- ✓ Lateral roots
- ✓ They increase water uptake .
- ✓ They provide support to the plant in the soil.
- ✓ Root hairs
- ✓ Absorbs water and mineral salts from the soil
- ✓ Root hairs absorb water and minerals salts from the soil by a process called

## Osmosis.

### **Root cap**

- ✓ It protects the tip of the growing root from damage

### **Root nodules**

- ✓ They store nitrogen fixing bacteria (rhizobia)

### 1.State the importance of nitrogen fixing bacteria stored in root nodules

- ✓ They fix nitrogen in the soil
- ✓ They help in formation of root nodules

### 2. State the importance of planting legumes in the garden.

- ✓ They improve soil fertility (they fix nitrogen in the soil)

## FIBROUS ROOT SYSTEM

This is where many roots of the same size and length grow from the radicle.

- ✓ It is common in monocotyledonous seeds

## Examples of plants with fibrous root system

- ✓ Millet
- ✓ Maize

- ✓ Sorghum
- ✓ Rice
- ✓ Barley
- ✓ Wheat
- ✓ Oats

### Diagram showing fibrous root system

- ✓ Sugar cane
- ✓ Onion
- ✓ Grass

### TYPES OF ROOTS

- ✓ Adventitious roots
- ✓ Tap roots

### Examples of crops with tap roots

- ✓ bean plant
- ✓ groundnuts

### Crops with adventitious roots

- ✓ maize
- ✓ wheat
- ✓ rice



## Note :

These are roots. which grow from any part of the plant but not from the radicle.

## ACTIVITY

- a) Name two types of roots Systems
- b) Name one part of the shoot system of a flowering plant.
- c) How is the terminal bud useful to the growing plant?
- d) Name the part of the plant between the two nodes.
- e) How useful is the root cap to a growing root
- f) State one functional use of roots to a plant.
- g) Give two examples of plants with tap root system.
- h) Name the group of flowering plants with root nodules.

- i) How useful is nitrogen fixing bacteria to the soil?
- j) State the use of nitrates to leguminous crops
- k) Name one source of plant protein.
- l) How do leguminous crops improve fertility?