



PLANTS



PLANTS



Plants, just like human beings, are **living organisms** that require **food, water and sunlight to live**. Moreover, like human beings, they **grow old and die**, they are made up of cells and most importantly, they are **equally reactive**.

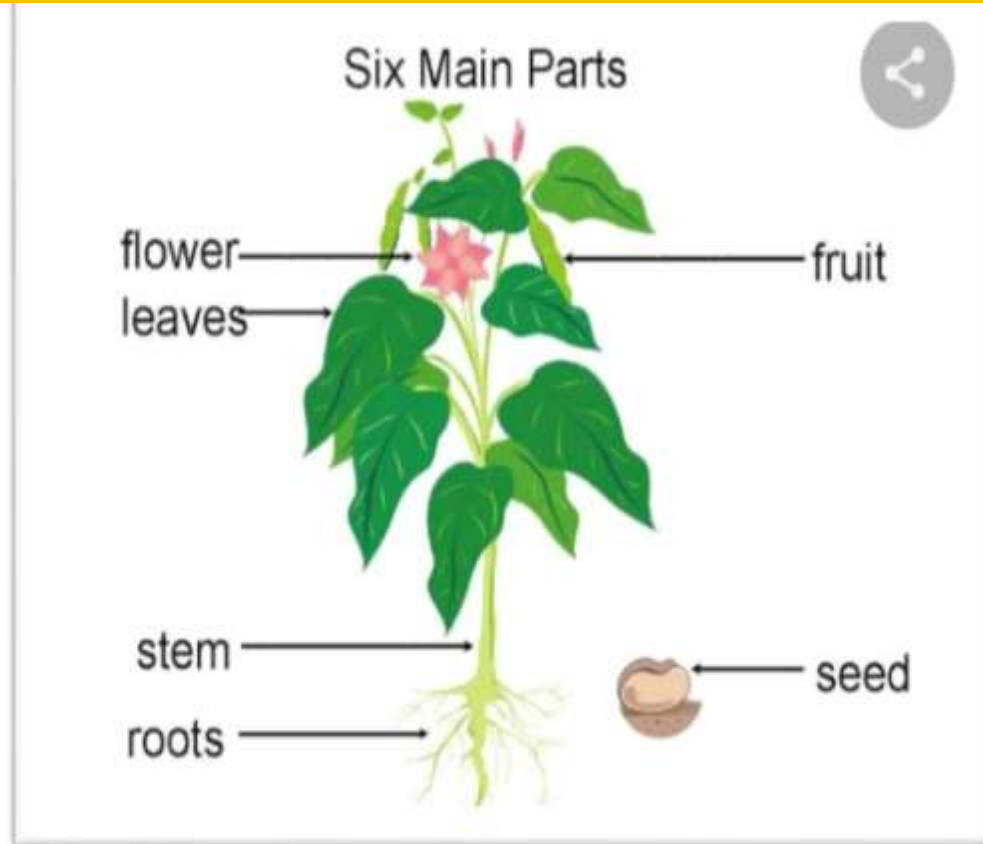


PLANTS

- Study of Plants is called as **botany**
- Father of botany is **Theophrastus**



Parts of Plants :-



The main parts of a plants include-

1-Roots

2-Stem

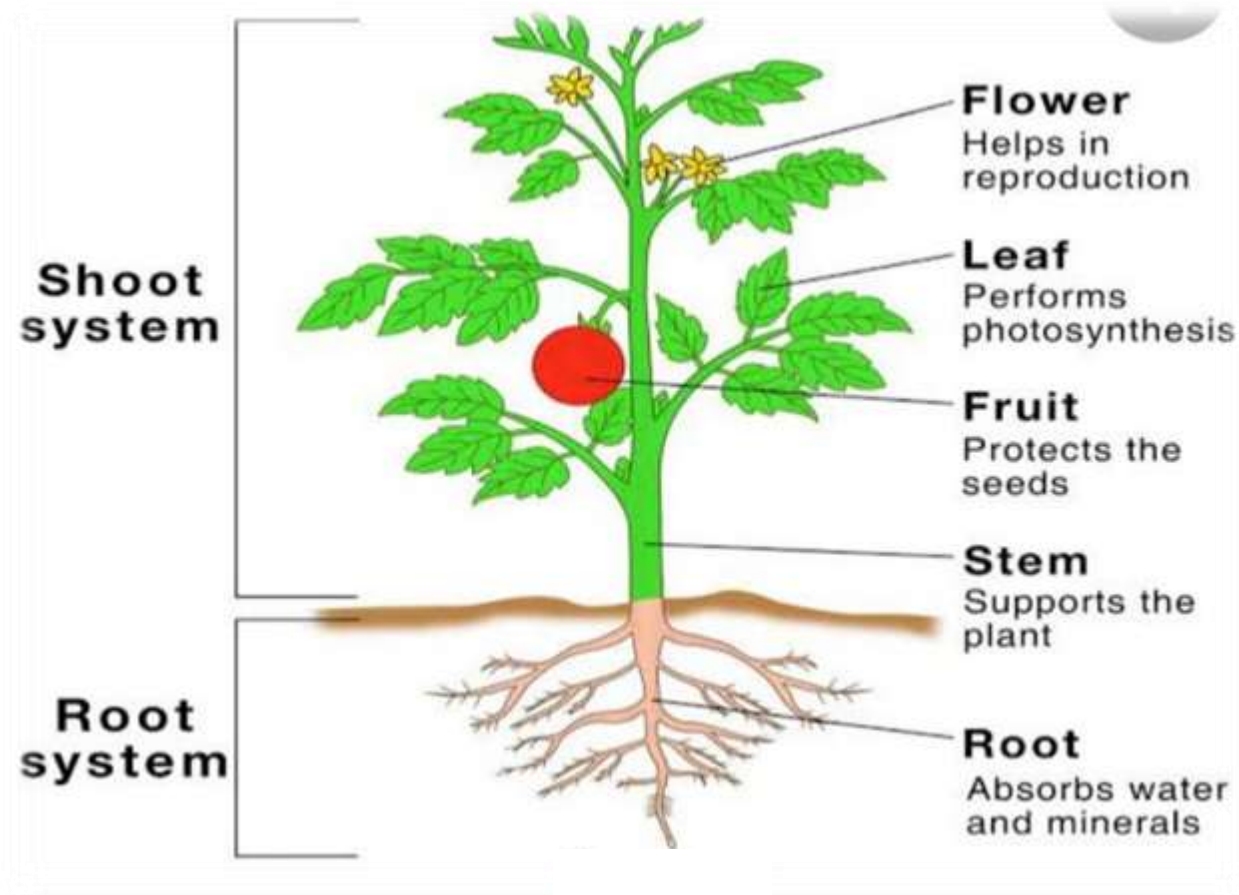
3-Leaves

4-Flowers

5-Fruits

6-Seeds

PARTS OF PLANTS



- A plant has many parts.
- Different parts perform different functionalities. The part of the plant that appears above the ground level is called **the shoot system**.
- The part of the plant which lies underneath the soil is called **the root system**.

ROOTS

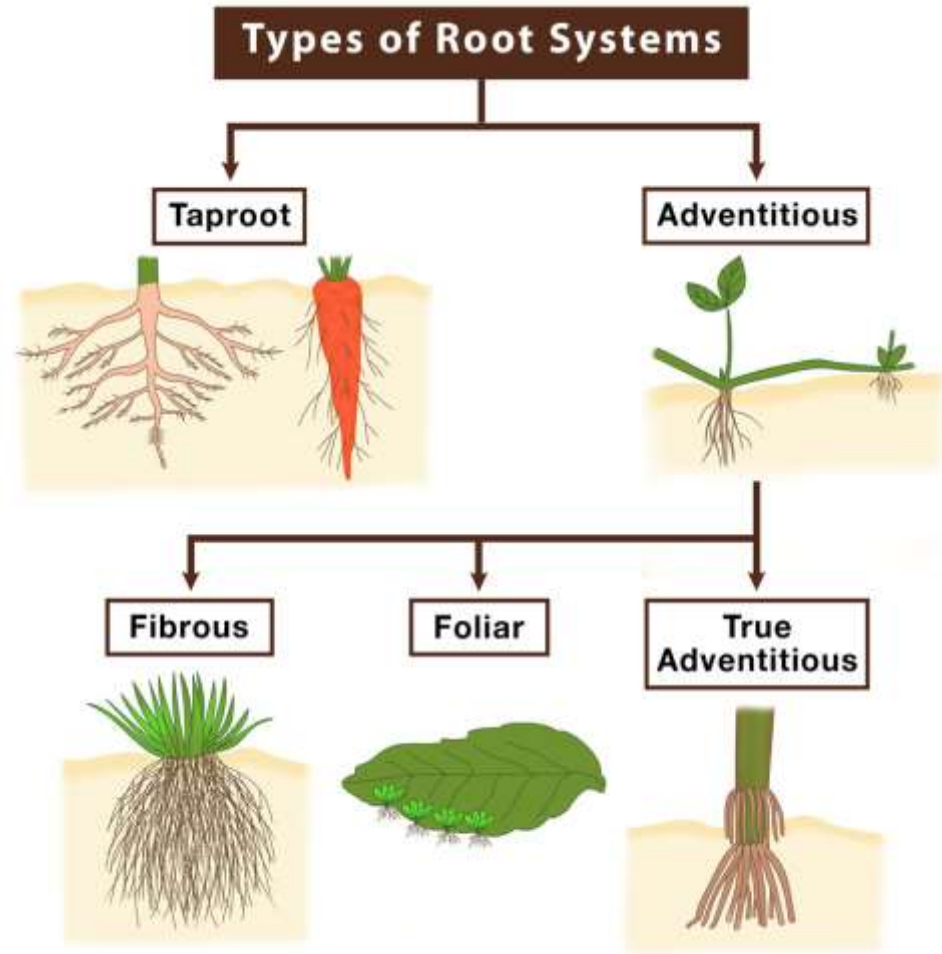


Roots are the most important part of a plant as they are responsible for transferring the necessary nutrients to the plant.

They are the agents responsible for **delivering water** and minerals to the plants.

Besides that, they are also the active **support system** of plants without which the plants would fail to stick to the soil.

TYPES OF ROOTS



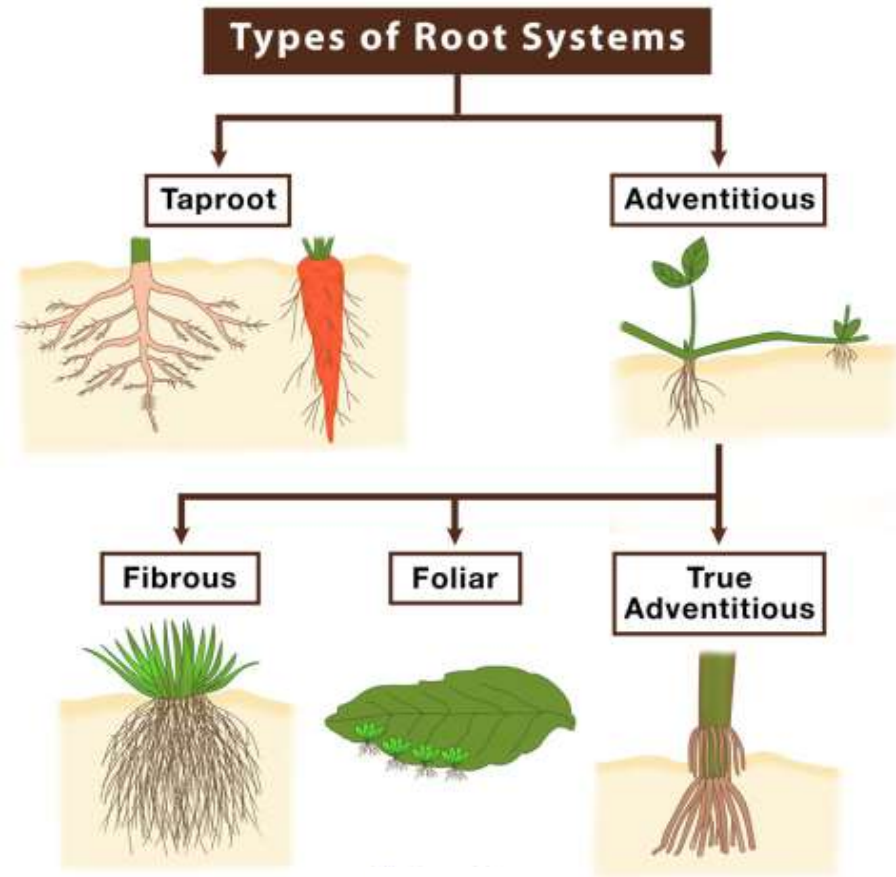
Taproot

They are always under the surface of the soil
They have one main root (**primary root**) with branches .

The primary root remains throughout the life of the plant.

They act as deep feeder, that is, they penetrate deep into the soil.

TYPES OF ROOTS

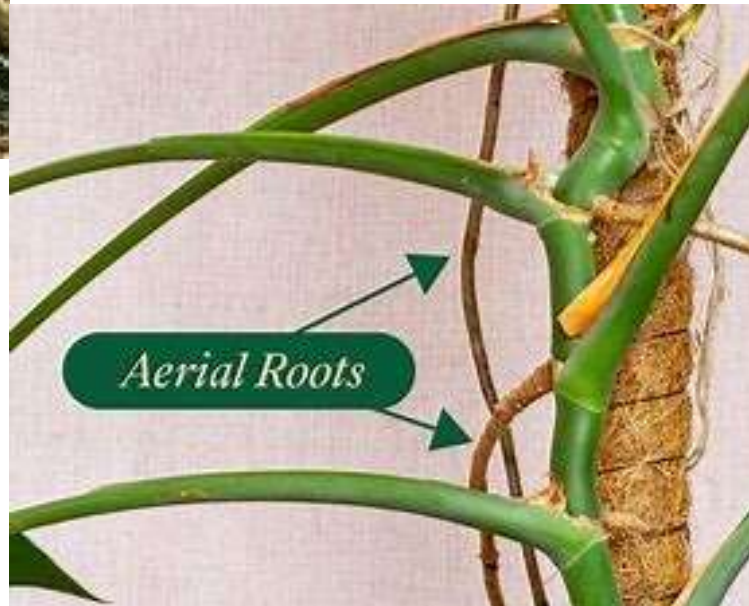


Adventitious roots as **storage** organs are specialized to perform the function of food storage.

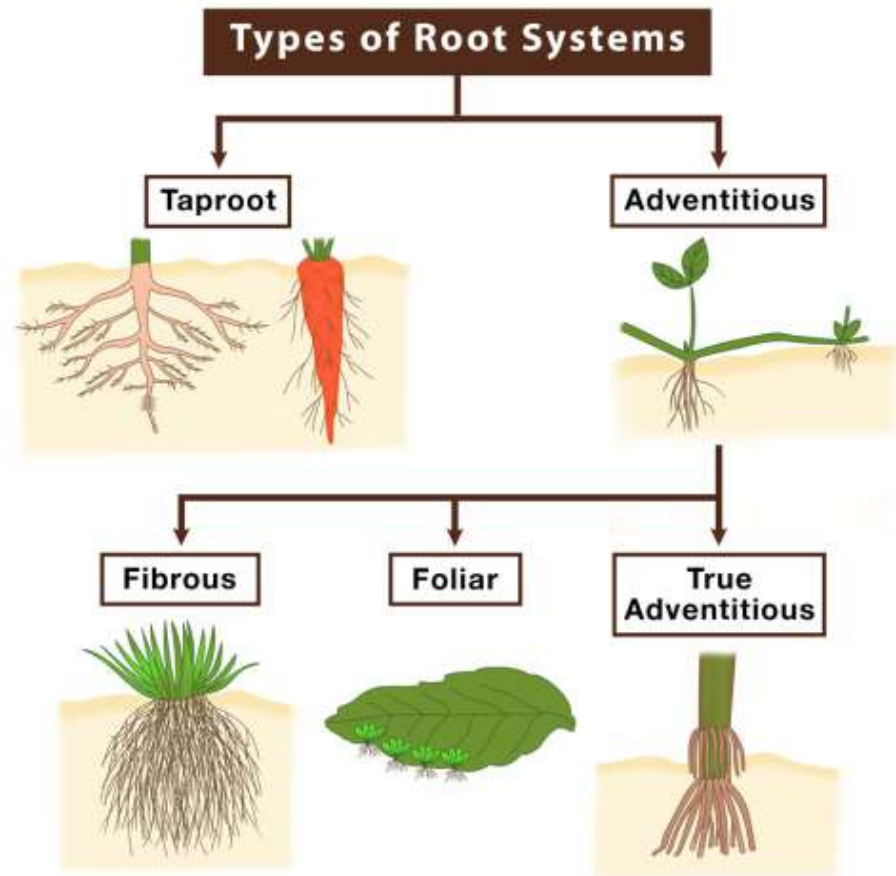
These types of roots are **thick and fleshy**, and can further be subdivided into different categories based on the location and shape of the swollen parts.

TYPES OF ROOTS

**Aerial roots are roots above the ground.
They are almost always adventitious**



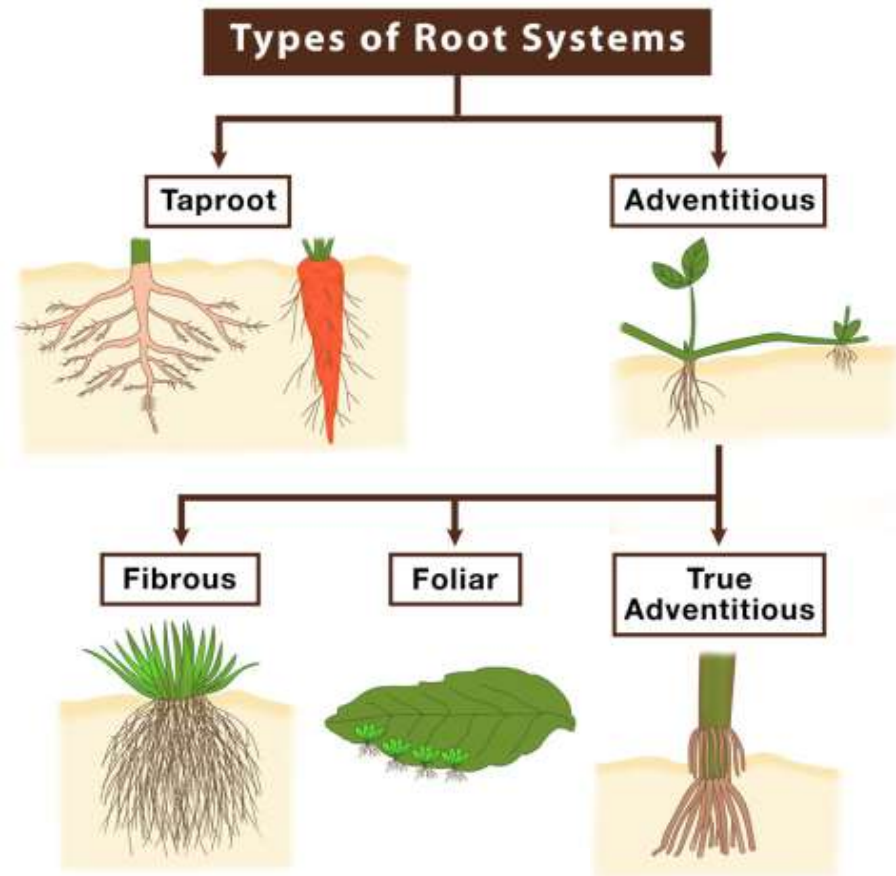
TYPES OF ROOTS



Foliar roots are those which develop on leaves

E.g. : **Bryophyllum Foliar** roots are those type of which arises from the veins of leaf

TYPES OF ROOTS



Fibrous Root System

Fibrous roots, are **bushy roots** in which thin, moderately branching roots grow from the stem.

Rice, wheat, maize, marigold, banana and are some examples of the fibrous root system.

STEM

The **stem** is the part of the plant which is found above the ground.

The bark of trees are **brown** in colour and younger stems are **green** in colour.

It forms the basis of the shoot system and bears leaves, fruits and flowers.

The region where the leaves arise is known as the **node**.



FUNCTION OF STEMS



The important functions of a stem include:

A stem carries out a number of functions essential for various processes such as photosynthesis.

Provides a definite framework and structure to a plant which later develops into a tree.

Support: Primary function of the stem is to hold up buds, flowers, leaves, and fruits to the plant. Along with the roots, a stem anchors the plants and helps them to **stand upright** and **perpendicular** to the ground.

Transportation: It is the part which transports water and minerals from the root and **prepared food** from leaves to other parts of the plant.

FUNCTION OF STEMS



Storage: Stems are one of the storerooms of plants where the prepared food is stored in the form of starch.

The stems of a few plants in the desert areas, such as *Opuntia*, get modified into thick, fleshy structures that store food and prevent excessive water loss due to transpiration.



Guards: Protects Xylem and phloem allowing them to perform their functions.