

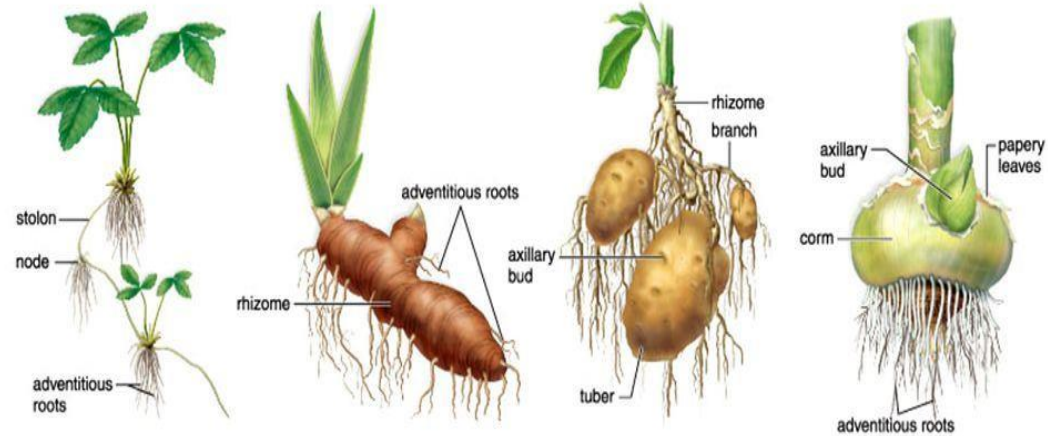
# Structure and Function of Living Organisms -Plants

BY : Ms.Simran



## Modified stems - examples

Copyright © The McGraw-Hill Companies, Inc. Permission required for reproduction or display.



a. Stolon



b. Rhizome



c. Tuber



d. Corm

```
graph TD; A[Flowering plants] --> B[The Root System]; A --> C[The Shoot System];
```

Flowering  
plants

The Root  
System

The Shoot  
System

# Classification of Root System

```
graph TD; A[Classification of Root System] --> B[Tap Root System]; A --> C[Fibrous Root System]
```

Tap Root  
System

Fibrous Root  
System

**Tap Root:** A single root grows downwards into the soil. It then branches into smaller lateral roots. Such an arrangement, of the root system is called tap root system.

Example: Pea, mustard, bean and gram.

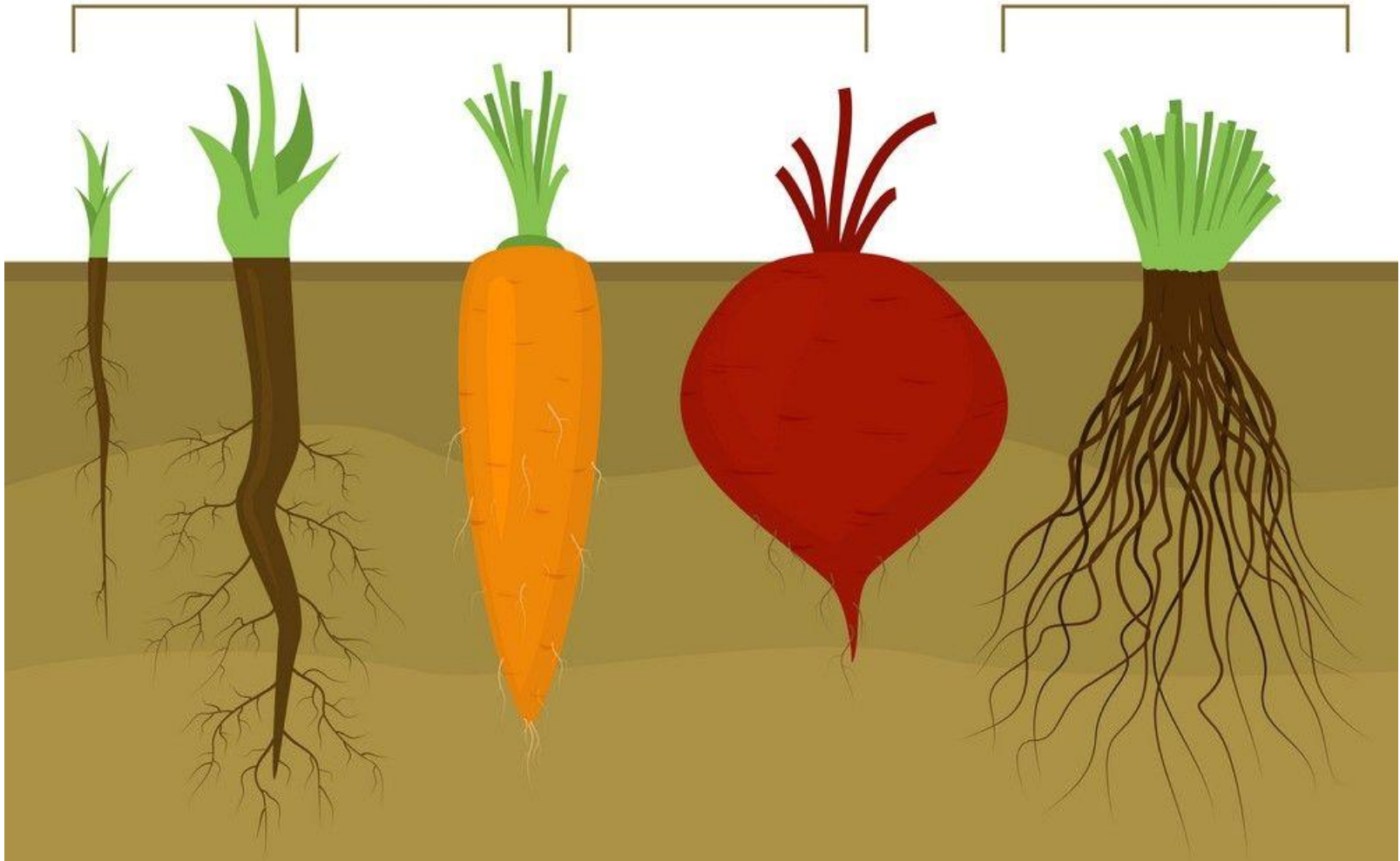
**Fibrous Root:** Several Roots grow out at the same time from the base of the stem. Such an arrangement of root system is called fibrous root system.

Examples: maize. Wheat, rice and grasses.

# TYPES OF ROOT SYSTEMS

Taproot

Fibrous root



## **Modifications of the Root:**

- **Roots modified for the storage of food-**

- Plants like carrot, sweet potato, turnip and beetroot, have their roots modified for the storage of food.
- Their roots are swollen and fleshy.
- They store food prepared by leaves.



**Raddish**



**Beetroot**



**Carrot**

# Roots modified for Support:

- These roots provide additional support to the plant and help them to stand erect. For example branches of the banyan tree get extra support with the help of its rope like roots hanging down from the branches.
- These roots act as pillars and prevent the long branches from bending downwards. Such roots are called **Prop Roots**.



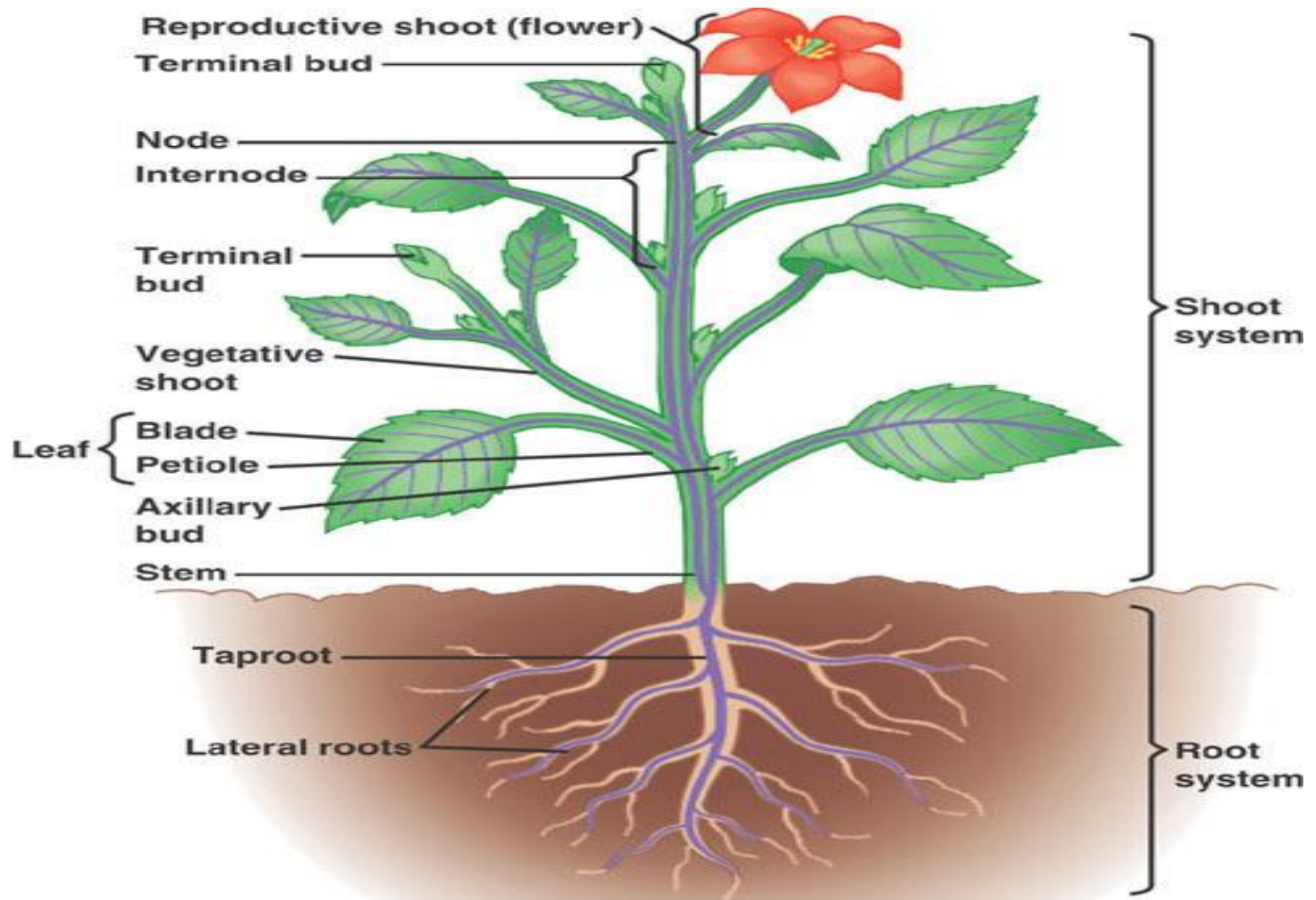


**Parasitic Roots:** 1) some plants, such as dodder, grow on another plant. Its roots arise from the stem and penetrate into the stem tissues of the other plant.

The roots then absorb water and minerals from the host plant. Such roots are called parasitic roots/ sucking roots.

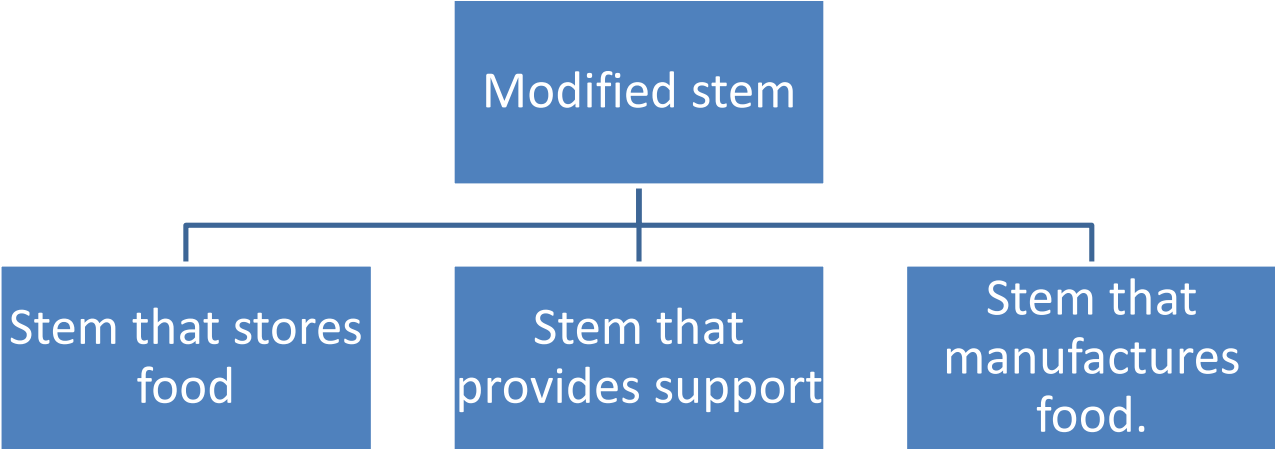


# The Shoot System:



## Modifications of the stem:

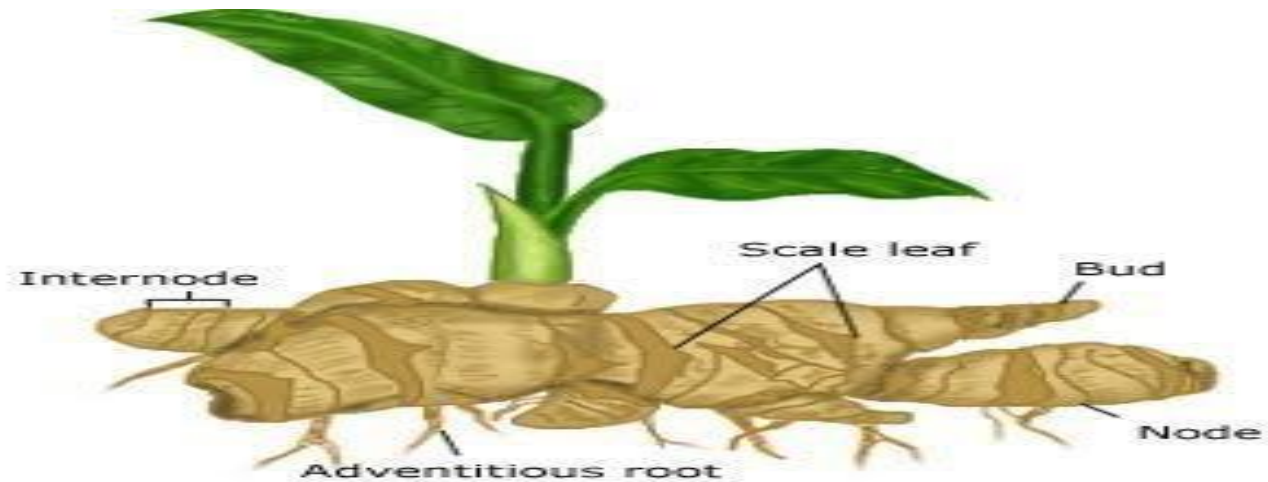
- In some plants, the stem performs some special functions as well. Such stems are called **modified stems**.
- They are of the following types
  - Stem that stores food.
  - Stem that provides support.
  - Stem that manufactures food.



# Stem that stores food:

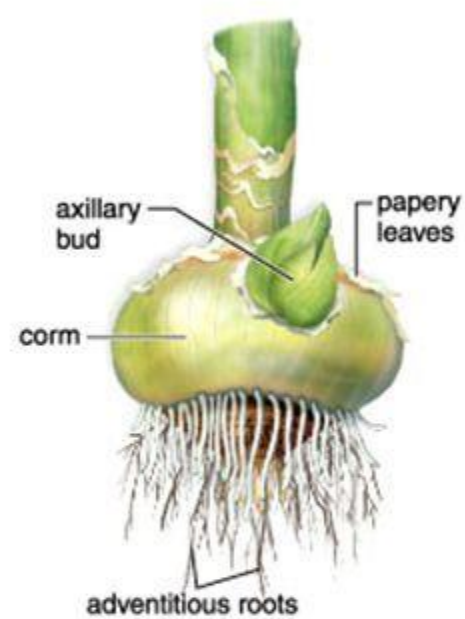
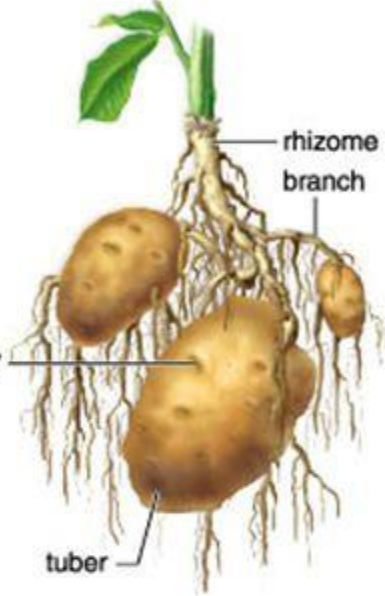
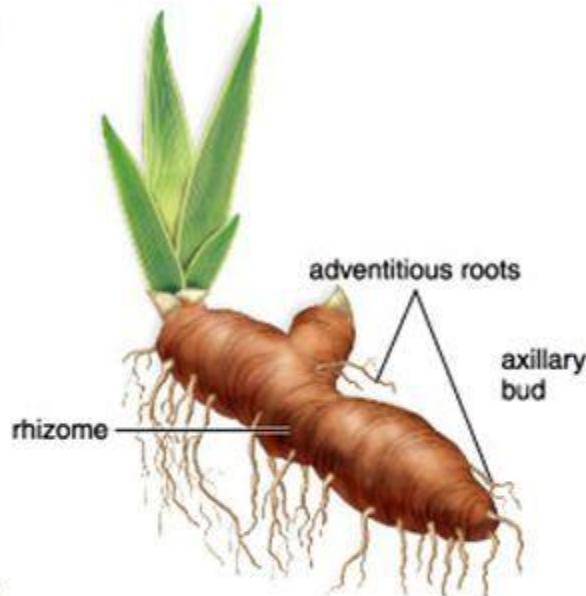
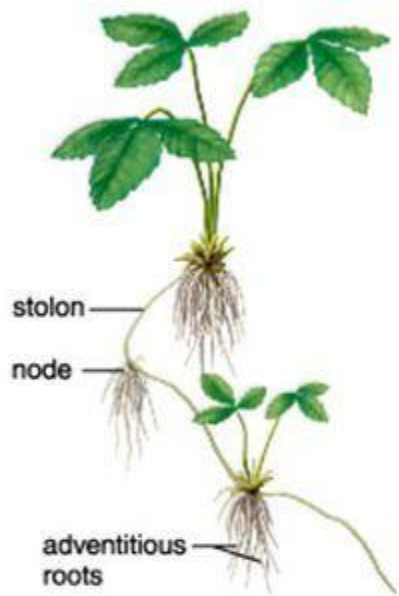


shutterstock.com • 295680344



# Modified stems - examples

Copyright © The McGraw-Hill Companies, Inc. Permission required for reproduction or display.



a. Stolon



b. Rhizome



c. Tuber

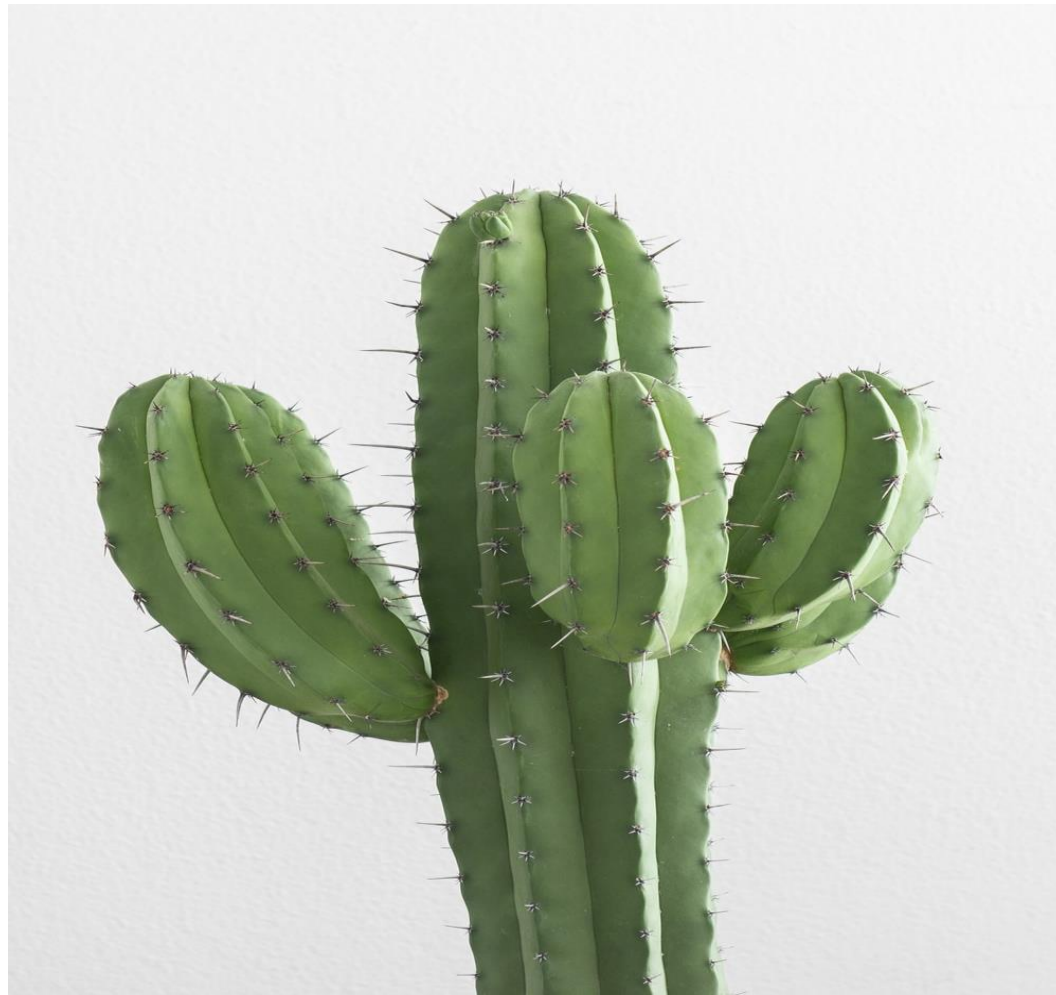


d. Corm

Stem that provides support to the Plant:



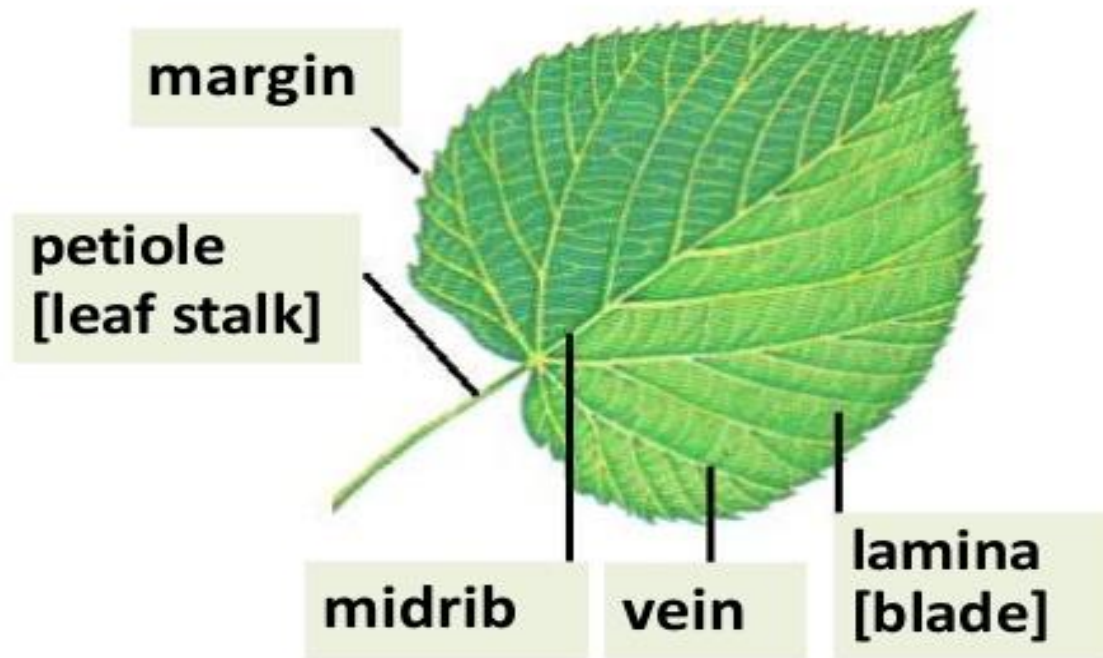
# Stem that Manufactures Food:





# Structure of leaf:

## External structure of a leaf



# Leaf Modifications



Tendrils – of grapevine



Venus fly trap



Spines – of cacti

Petal – of  
flowers



Storage leaf – onion

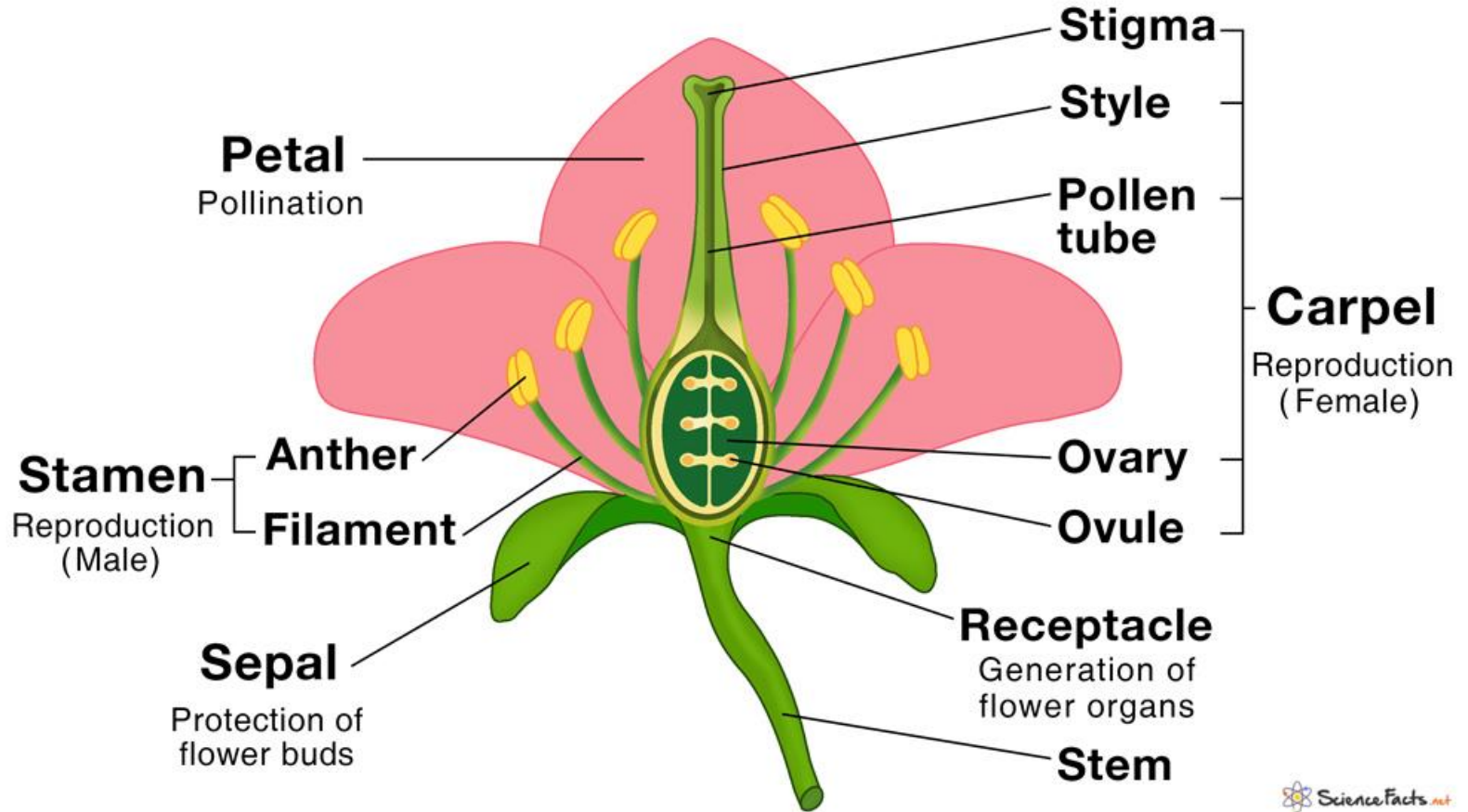


Succulents –  
jade plant

# Leaf Modified as reproductive organ



# Parts of a Flower



# Seed germination

