

Classification of the Kingdom Plantae



Primary Classification

- **Flowering plants –**

Characteristics: Plants bear flowers

Examples:

- **Angiosperms** (-) - mango, peas, apple, sugarcane, and grass.

Angiosperms bear flowers, fruits, and seeds. One of the most important characteristics of angiosperms is that their seeds are enclosed in a fruit.



Mangoes



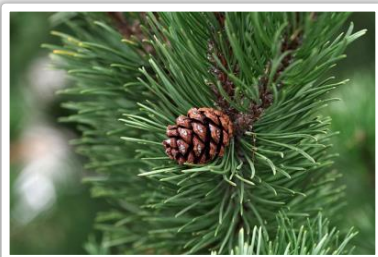
Apples



Green Peas

- **Gymnosperms** - pine, fir, cedar, and spruce trees

The Gymnosperms are the group of plants that bear seeds, but no fruits.



Seed of Pine



Seeds of Fir



Seeds of Spruce

- **Non-flowering plants –**

Characteristics: Plants do not bear flowers

Examples:

- **Algae** - Chlamydomonas, and Spirogyra

Algae is aquatic in habitat and found both in marine and freshwater. They are usually green, having chlorophyll.



Algae Spirogyra in a pond



Spirogyra – the filamentous algae



Chlamydomonas – the single cell algae

- **Bryophyta** – mosses

These plants have peculiar characteristics that they have stems and leaves, but no roots. Instead, they have threadlike structures called *rhizoids* that stick to the surface and absorb water and minerals.



Layer of Moss on Ground



Layer of Moss on Wall



Moss taken out of Wall

- **Pteridophyta** – ferns

They bear well-formed leaves, stem, and roots, but do not produce flowers and seeds. Their leaves produce small rounded bodies on their under surface. These bodies contain tiny *spores*, which are capable of producing plants.



Various types of ferns



Secondary Classification based on other Characteristics

- **Classification and examples of Kingdom Plantae based on Habit or Physical features**

- **Herbs**– Mustard, pea, paddy, and ladyfinger

Small plants with a soft stem. They do not grow more than three to four feet in height.



Mustard Plants



Ladyfinger Plant



Paddy Plant

- **Shrubs**– China-rose, and oleander

Medium-sized plants with hard and woody stems. Many branches are seen rising just above the ground.



China Rose



Oleander



Red Rose

- **Trees**– mango, cedar, and spruce

Tall plants with hard and woody stems. They have the main trunk from which branches and leaves arise.



Mango Tree



Cedar Tree



Pine Trees

- **Classification and Examples of Kingdom Plantae based on lifecycle**

- **Annual**– Wheat, tomato, peas, cauliflower, and rice

These plants complete their life cycle in one year from seed to flower. They grow from seeds, produce flowers, seeds and die in the same years.



Wheat



Tomatoes



Cauliflower

- **Biennial** – Reddish, carrot, and turnip

These plants have a two-year life cycle. In the first year, they produce leaves and roots. In the winter, the leaves die. The root survives and new leaves, flowers, and seeds are produced in the second year.



Reddish Plants



Carrot Plants



Turnip Plants

- **Perennial** – Guava, palm, and coconut

These plants live for many years and produce roots that store food. Food is also sometimes stored in other parts of the plant. The root survives the winter and the plant produces leaves, flowers and seeds year after year.



Guava



Palm Trees



Coconut Trees

- **Classification and examples of plant kingdom based on the mode of nutrition**

- **Autotrophs** – plants which prepare their food – Most green coloured plants

- **Heterotrophs** – Plant which do not prepare food

- **Parasites** – Cuscuta, and Viscum

Plants that obtain their food from other living organisms without killing them



Cuscuta



Fungi

- **Saprophytes** – yeast, and fungi.

Plants that feed on the dead and decomposed bodies of plants and animals.

- **Classification and examples of kingdom Plantae based on habitat**

- **Mesophytes** – mango, and apple

Plants living on the land with sufficient water.



Mangoes



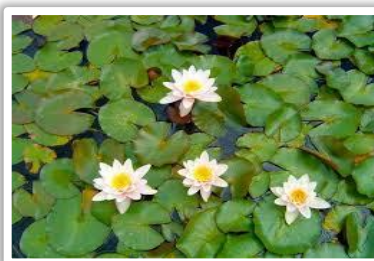
Apples

- **Hydrophytes** – Lotus, and water-lily

Plants that live in water.



Lotus



Water Lily

- **Xerophytes** – Cactus, marram grass

Plants that live on land having a scarcity of water, as in a desert.



Cactus



Marram Grass