

## The Leaf

**1. What is Leaf?**

Ans. Leaves are green, thin and flat outgrowths of the stem.

**2. What is Foliage?**

Ans. All the leaves of plant are collectively called its Foliage.

**3. What is Node?**

Ans. The point on the stem from where a leaf arises is called the Node.

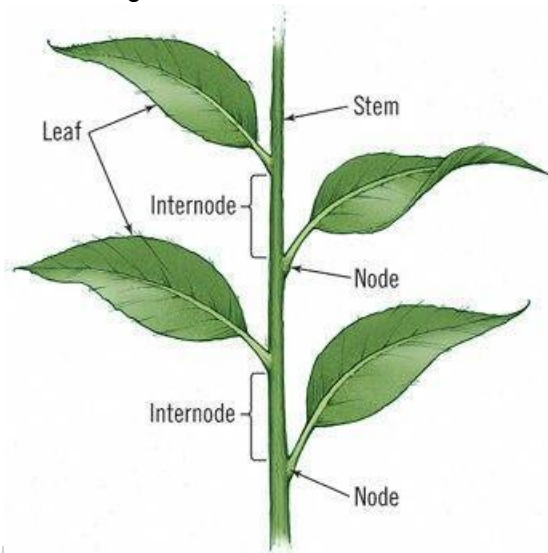
**4. What is Internode?**

Ans. The leafless portion of the stem between any one node and the next is called Internode.

**5. What are the main parts of Leaf?**

Ans. The main parts of Leaf are-

- a. Leaf Petiole
- b. Leaf Blade/ Leaf lamina
- c. Leaf Margin
- d. Leaf Veins
- e. Leaf Base



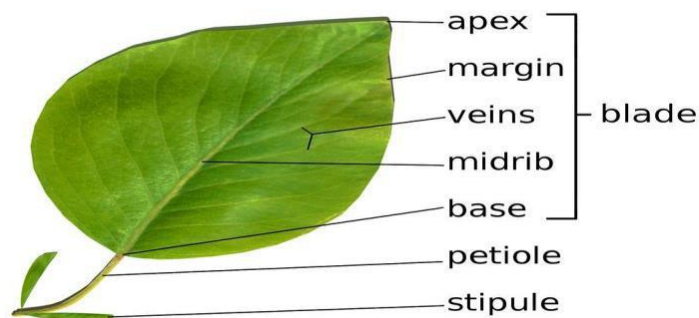
**6. What is Leaf Petiole?**

Ans. A thin, cylindrical stick by which the leaf is attached to the stem is called Leaf Petiole.

**7. What is Leaf Blade?**

Ans. The thin, flat, green structure at a leaf expanded horizontally, is called **Leaf Blade**.

It is also called **Leaf Lamina**.



**8. Why the Leaf blade is looking green.**

Ans. The color of leaf blade is green due to the presence of a green pigment named Chlorophyll. This

chlorophyll carrying out the process of Photosynthesis.

**9. What is Leaf Margin?**

Ans. The boundary area of extending along the edge of the leaf is called **Leaf Margin**.

**10. What is Leaf Apex?**

Ans. The pointed part of the leaf just opposed to the petiole is called Leaf Apex.

**11. Why the color of a leaf is green?**

Ans. The color of leaf blade is green due to the presence of a Green Pigment called **Chlorophyll**. It helps in carrying the process of Photosynthesis to prepare food.

**12. What is Midrib?**

Ans. A central thick structure which extends long the length of the lamina of a leaf is called Central Vein or Midrib.  
It starts from Apex and continues into the Petiole.

**13. What are Veins?**

Ans. The midrib of a leaf is divided into several lateral branches, they are called Veins.

The pattern of each vein is specific and it helps to identify any plant by this.

The veins provide support to the blade and helps in the transport of materials to and away from the leaves.

**14. What is the role of Veins?**

Ans.

- a. The pattern of each vein is specific and we can identify any plant by this.
- b. The veins provide support to the blade and helps in the transport of materials to and away from the leaves.

**15. What is Leaf Base?**

Ans. It is a small, swollen portion at the end of petiole is called **Stipule or Leaf Base**.

**16. What are Leaflets?**

Ans. In some plants leaf lamina is divided into small leaves like structure. These structures are called Leaflets.

**17. Based on the division of leaf lamina leaves are divided into how many parts?**

Ans. Based on the division of leaf lamina leaves are divided into two parts:

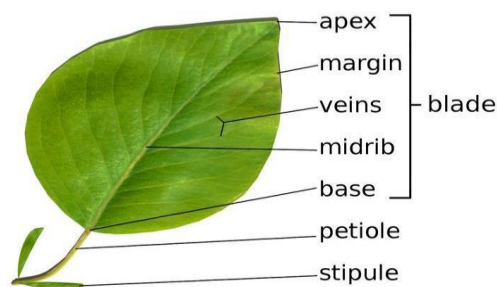
- a. Simple Leaf
- b. Compound Leaf.

**18. What are the characteristics of Simple Leaf?**

Ans: The characteristics of simple leaf are

- a. In simple leaf lamina is not divided into separate lobes or leaflets.
- b. A single bud is present in the axil of leaf.
- c. The base of leaf obtain has stipules.

Example: Leaves of Mangoes, guava and peepal.

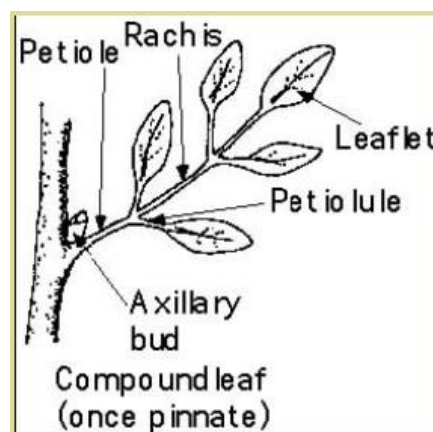


**19. What are the characteristics of Compound Leaves?**

Ans. the characteristics of compound leaves are:

- a. The Lamina of leaves are divided into two or more leaflets.
- b. The leaflets may either arise on the sides or at the tip of petioles.
- c. A bud lies in the axis of the whole leaf. The individual leaflets do not have these buds.
- d. The stipules may occur at the base of the whole leaf. The base of the leaflets does not have stipules.

Ex: Leaves of rose, Neem etc.



**20. What are the differences between Simple and Compound Leaf?**

Ans.

BASIS FOR COMPARISON	SIMPLE LEAVES	COMPOUND LEAVES
Meaning	Such leaf in which the leaf blade or lamina is undivided into lobes is called simple leaf, and the arrangement of such leaves are in acropetal succession.	The leaf which properly shows the division of leaf blade or lamina into leaflets is called as compound leaves. These leaves do not make acropetal succession arrangements of the leaflets.
Leaf blades	They have single blades.	They have smaller and separate leaf blades called leaflets.
Axillary bud	Bud is placed in the axil (near the petiole and stem).	Each leaflet does not have axil, though buds are placed in the axil of the leaf.
Division in lamina	There is no division of lamina.	The lamina is divided into more than two leaflets, arising on the side of a rachis or at the tip of the petiole.
Stipules	The base of a leaf contains stipules.	The stipules are found at the base of the leaf, but other additional structures are absent.
Examples	Black gum trees, Black cherry trees, Guava, Mangoes, various types of Oaks.	Rose, Neem, Shame plant, Buckeye.

**21. What is Leaf Venation?**

Ans. the arrangement of veins in a leaf called Leaf Venation.

**22. How many types of Venation in the leaf?**

Ans. Leaf Venation are two types.

- Reticulate Venation
- Parallel Venation

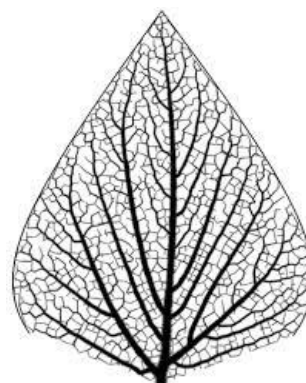
**23. Define Reticulate Venation?**

Ans. In reticulate venation, veins are interconnected and form a web like network structure which is present on both sides of the midrib.

**24. Write the properties of Reticulate Venation?**

Ans. The properties of Reticulate Venation are

- The veins are interconnected to each other.
- Present in dicot plants.
- The veins are arranged in the leaf in a net-like pattern.
- This type of venation can be observed in the leaves of Rose, China Rose, Tulshi, Peepal, Neem etc.



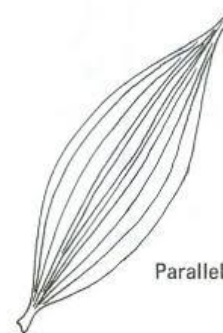
**25. Define Parallel Venation.**

Ans. Parallel Venation can be defined as a pattern in the veins of a leaf whereby the veins run parallel to each other from the petiole to the leaf tip.

**26. Write the characteristics of Parallel Venation.**

Ans.

- a. In parallel venation the veins run parallel to each other.
- b. Present in monocot plants.
- c. This type of venation can be observed in the leaves of banana, wheat, maize, rice, onion, grass etc.



**27. What are the differences between Parallel and Reticulate Venation?**

Ans.

Basis of Comparison	Parallel Venation	Reticulate Venation
Definition	Parallel Venation can be defined as a pattern in the veins of a leaf whereby the veins run parallel to each other from the petiole to the leaf tip.	In reticulate venation, veins are interconnected and form a web like network structure which is present on both sides of the midrib.
Presence	Present in monocot plants.	Present in dicot plants.
Examples	Examples of parallel venation include bamboo, wheat, grasses, maize, sorghum, coconut, palm, rice, bajra etc	Examples of reticulate venation include mango, hibiscus, ficus, guava, bastard teak, china rose, holy basil, physic nut, white teak etc.
Arrangement of veins	Arrangement of veins in parallel venation is parallel to one another.	While arrangement of veins in reticulate venation produces a network or web like structure.

**28. What are the roles of leaves for plant respiration?**

Ans. the surface of the leaves has tiny pores called stomata, which help in the exchange of gases during respiration. Oxygen enters the leaves and carbon dioxide is released outside.

**29. What is Transpiration?**

Ans. plant absorb water through their roots. After absorbing required water excess water is lost as water vapor through stomata. This process is called Transpiration. This process helps in cooling the atmosphere.

**30. What are modified leaves**

Ans. In many plants leaves perform some function other than manufacturing of food. These leaves are called Modified Leaves.

**31. How can leaf manufacture food?**

Ans. Leaves contain a green pigment called chlorophyll which in presence of sunlight, water and carbon dioxide manufacture food. This process is called photosynthesis.

**32. How are leaves modified to carry out additional functions?**

Ans. leaves or leaf tips of some plants modify into soft coiled or wire-like structure. These are tendrils which give support to the plants with weak stems.

Example: Pea, Glory Lily leaves.

**33. How desert plants survive in very hot weather.**

Or

**Which type of modification are seen in Desert Plants? How these modification helps the desert plants.**

Ans. In desert plants like cacti, leaves are reduced to fine, pointed and hard spines. This modification of leaves helps the plant to conserve water and grow in desert areas. These leaves modified into pointed spines also protect the plants from grazing enemies, as in the case of prickly pear and Mexican Poppy.

**34. Why the leaves of Onion are thick and Fleshy?**

Ans. the leaves of onion store extra food in their leaves. So that their leaves are Thick and Fleshy.

**35. Explain the process of feeding on insects in a pitcher plant.**

Ans. Few plants feed on insects to obtain their nutrition, these plants are called Insectivorous Plants or Pitcher Plants. these plants usually grow in soil which has less amount of nitrogen. Thus, they feed on insects to fulfill their nitrogen requirements. These plants are generally green plants and they can prepare their own food by using raw materials like the autotrophs do.

Example: Venus Flytrap, Bladderwort, Sundew plant etc.

**36. What is Vegetative Reproduction?**

Ans. The process by which plants give rise to new plants of their own kind from their vegetative parts, such as stems, roots and leaves is called Vegetative Reproduction.

**37. What are Foliar Buds?**

Ans. Vegetative Reproduction plants can produce small buds in the notches present at the margin of the leaves. These buds are called Foliar Buds, which develop gradually into small plants.

**38. How Vegetative Reproduction plants produce new plants?**

Ans. Vegetative Reproduction plants can produce small buds in the notches present at the margin of the leaves. These buds are called Foliar Buds, which develop gradually into small plantlets. The plantlets detach from the mother plants, fall off and give rise to new plants.

**39. Give some examples of Vegetative Reproduction plants?**

Ans. The examples of Vegetative Reproduction Plants are Bryophyllum, Begonia and Kalanchoe.