Unit 2

Flower and Fruit

We have studied different parts of plants on the basis of that, draw a labeled diagram of plant showing all organs of plants and fill appropriate colours.

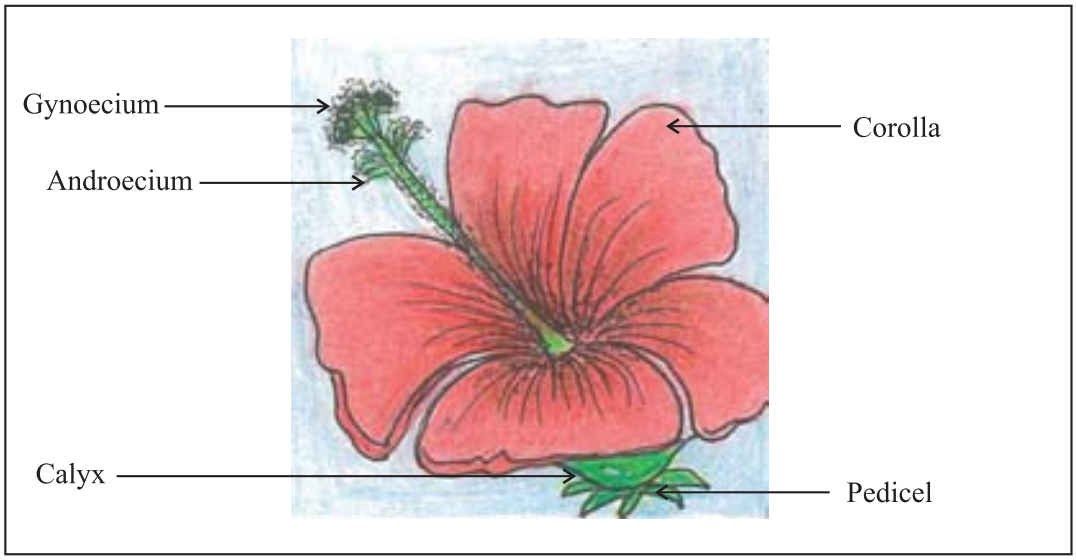
Observe any one around you.

Find the most beautiful and attractive organ of that plant ?

Collect some plants found around you.

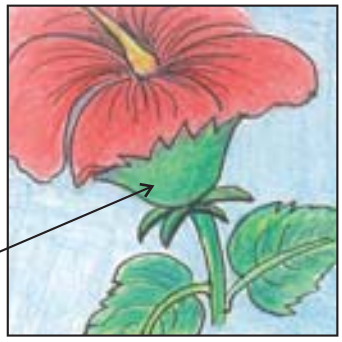
1.	Shoe-flower		2.	Vinca (Barmasi)	
3.	Nerium (Karen)		4.	Night Jasmine	
5.	Rose		6.	Champa	
7.	Datura		8.	Mogra	

Now, observe the flowers collected by you. Observe whether the parts shown in the diagram are present in that flower or not.



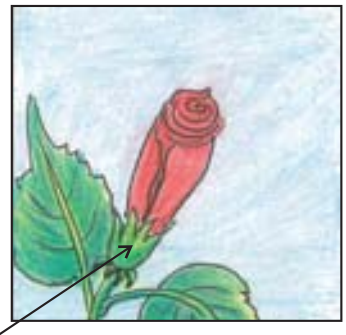
Receptacle :

- The tip region of a peduncle is slightly flattened on which different parts of the flower are arranged.
- Find out the receptacle of the flower collected by you.



Calyx :

- Look at the green coloured leafy structures of the flower,. They are known as sepals. Sepals together form calyx. It protects the flower during its budding stage.
- Identify the calyx of the flowers collected by you.



Corolla :

- Look at the colourful structures arranged above calyx. They are known as petals. Petals together form corolla.
- Identify the corolla of the flowers collected by you.
- Observe the flowers collected by you and complete the following table.

Corolla

Sr.no.	Name of flower	Colour of petals	Number of petals	Does it smell?

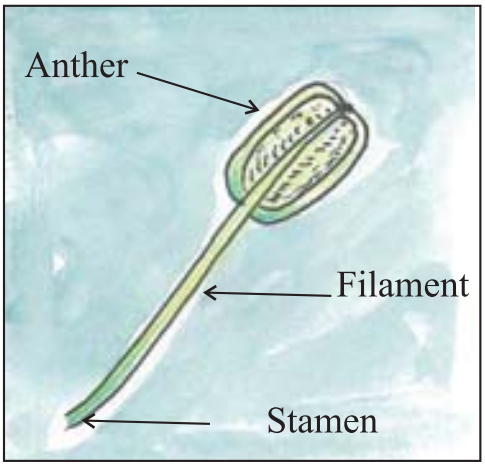
Corolla is colourful and provides good smell. Their function is to attract insects.

- **1, 2, 3, 5, 8, 13, 21, 34, 55 .... Those type of series of digit is called Fibonachi series. Here each number is the total of its previous two digits. E.g. 1+2=3, 2+3=5, 3+5=8 Number of petals and sepals of a flower follow fibonachi series.**

Androecium :

- Remove petals from the flower collected by you.
- Now observe the filament like structure.
- You will find that the structure in the centre is different from the structures surrounds it.

- Structures found are surrounding called stamen.
- Separate all the stamens from its flower and count them.
- Lower part of stamen looks like a thin thread.
- Upper part of stamen is called anther.
- Anther produces pollen grains.

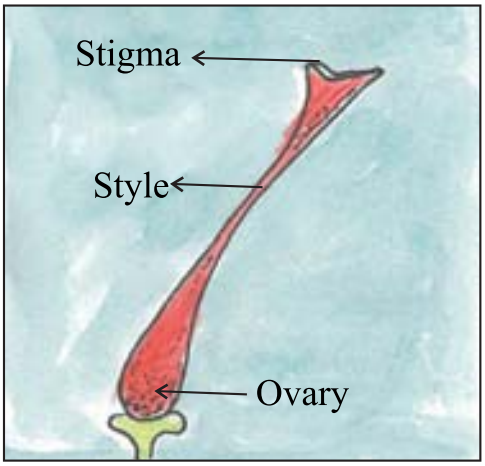


Androcium

- Identify the androcium in all the flowers collected by you.

Gynoecium :

- A tube like structure surrounded by stamens is called Carpel.
- Observe the carpel of the flower collected by you.
- The flatten, upper most region of carpel is called stigma.
- Tube like structure beneath the stigma is called style.
- The swollen portion at the base of carpel is known as ovary.



Gynoecium

- Cut the ovary in to two halves with the help of a blade.
- Observe its internal structure.
- Whether the numbers of stamens and carpels are equal in the flower collected by you ?

- There is only one carpel in most of the flowers. But sometimes there are more than one carpel found in a flower. Carpels unitedly form the gynoecium.
- Identify the gynoecium in all the flowers collected by you.

What is required ? A flower, a paper and magnifying glass.

What to do ?

- ☞ Separate all the stamens from the flower.
- ☞ Strike the anther on a paper with the help of your fingers and separate pollen grains from it.
- ☞ Try to observe those pollens with the help of magnifying glass.

Pollination :

Migration of a pollen grain from stamen to stigma of a carpel is called pollination. There are two types of pollinations.

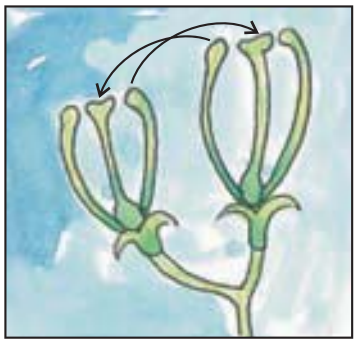
(1) Self-pollination

(2) Cross-pollination

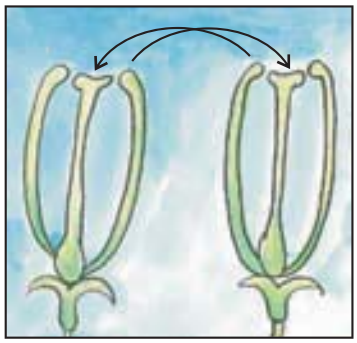
(1) Self-pollination : Pollination taking place within the flowers of same plant.

(2) Cross-pollination : Pollination taking place between flowers of two different plants of same species.

Self pollination



Self pollination

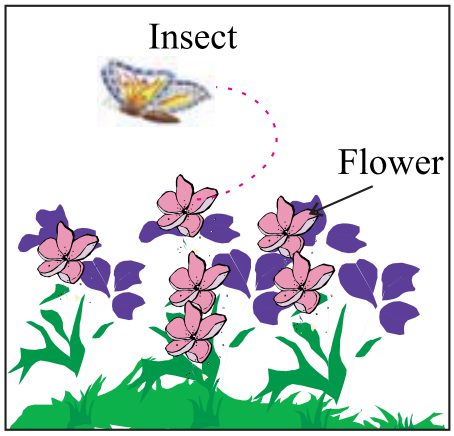


Cross pollination

Careers of pollination :

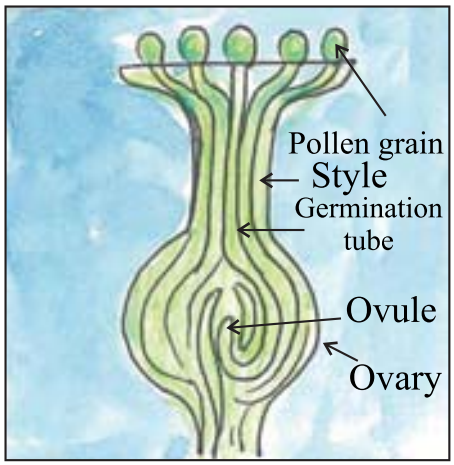
How does a pollen grain do move from one flower to another flower ?

Pollen grains are very light in weight it can fly with air or flow with the water. While sometime some insects like butterfly, bee and honeybee are attracted by the colorful and fragrant petals of the flower and pollen grains stick to their body. Thus, wind, water and insects are the careers of pollen for the means of pollination. Even birds are bat also play an important role in pollination.



Fertilization :

Pollengrains reach stigma due to pollination. Pollen grains develop pollen-tube which reaches the ovary. Male gamete travelling within the pollen-tube binds with the egg cell of ovary. This process is called fertilization. After fertilization the egg cell converts into an embryo, ovule converts in to seed and ovary converts into fruit.



Fruit :

There are two types of fruits : (1) Fleshy fruits (2) Dry-fruits.

1. **Fleshy fruits :** Wall of ovary becomes flashy and bulky in some fruits. E.g. Mango, Papaya, Lemon, Tomato etc. These types of fruits are called Fleshy Fruit.
2. **Dry fruits :** The wall of ovary becomes dry in some fruits at their maturity, E.g. Field bean, pea, pigeon pea, green gram. These type of fruits are known as dry-fruit.

Fleshy fruit

Dry-fruits

Prepare a list of fruits you know.

Classify those fruits in following table :

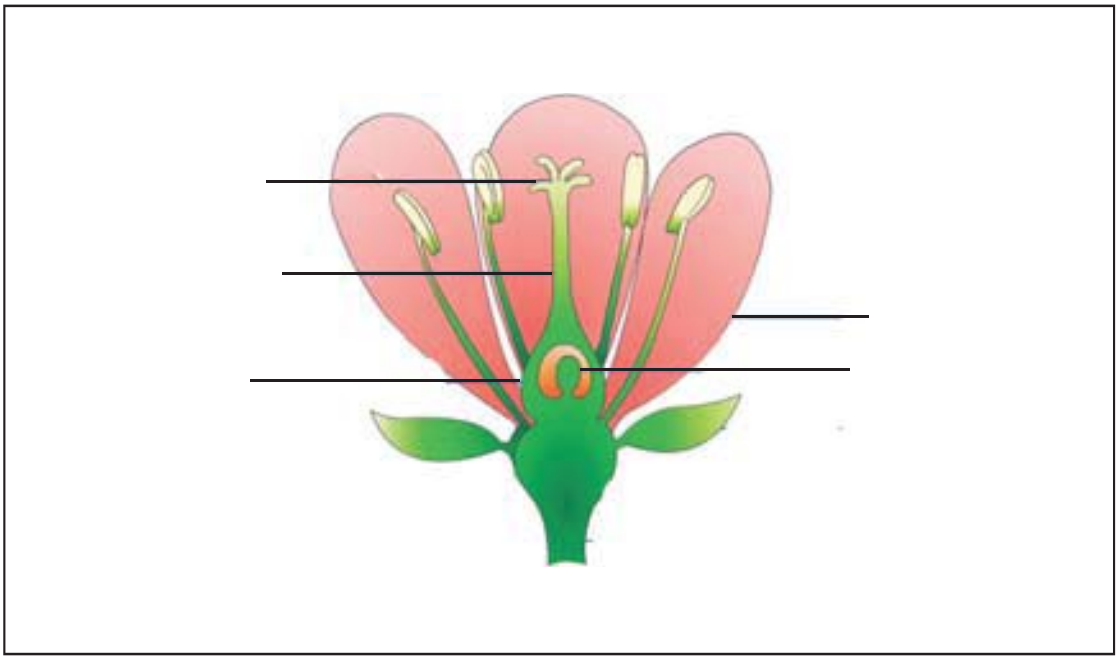
Fleshy fruits	Dry fruit

- Those fruits are known as a Legume of pod-which are formed by one chambered ovary. E.g. Field bean, cow pea, pea etc.
- Those fruits are known as Capsule, which are formed by bicarpellary or polycarpellary ovary. E.g. Cotton, bhindi (ladyfinger).
- If the pericarp remains fused with the seed coat than type of fruit is known as caryopsis. E.g. Wheat, maize, pearl millet.

Q.1 Tell me, who am I ?

1. Flowers are arranged on me _____.
2. I protect the flowers in bud condition_____.
3. I am a colorful part of the flower and I am also full of fragrance_____.

Q.2 Label the following diagram of a flower :



Q.3 Classify the following fruits into fleshy fruits and dry-fruits :

Ground nut, Lemon, Tomato, Cucumber, Bottle Guard, Pea, Mango, Bengal Gram, Brinjal, Bitter guard, Egg plant (jamun).

Fleshy fruits	Dry-fruits