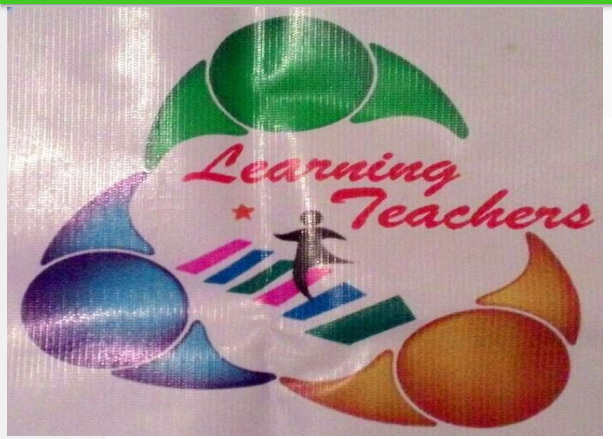
3 Flower to flower



T SREELAL

NSS UPS UPPADA

Learning Teachers Kerala

Flower to flower.

Isn't it?

- ***Flowers and butterflies are always a wonderful sight to us!***

Observation

- Are all flowers alike?
  * In what all aspects they seen different?

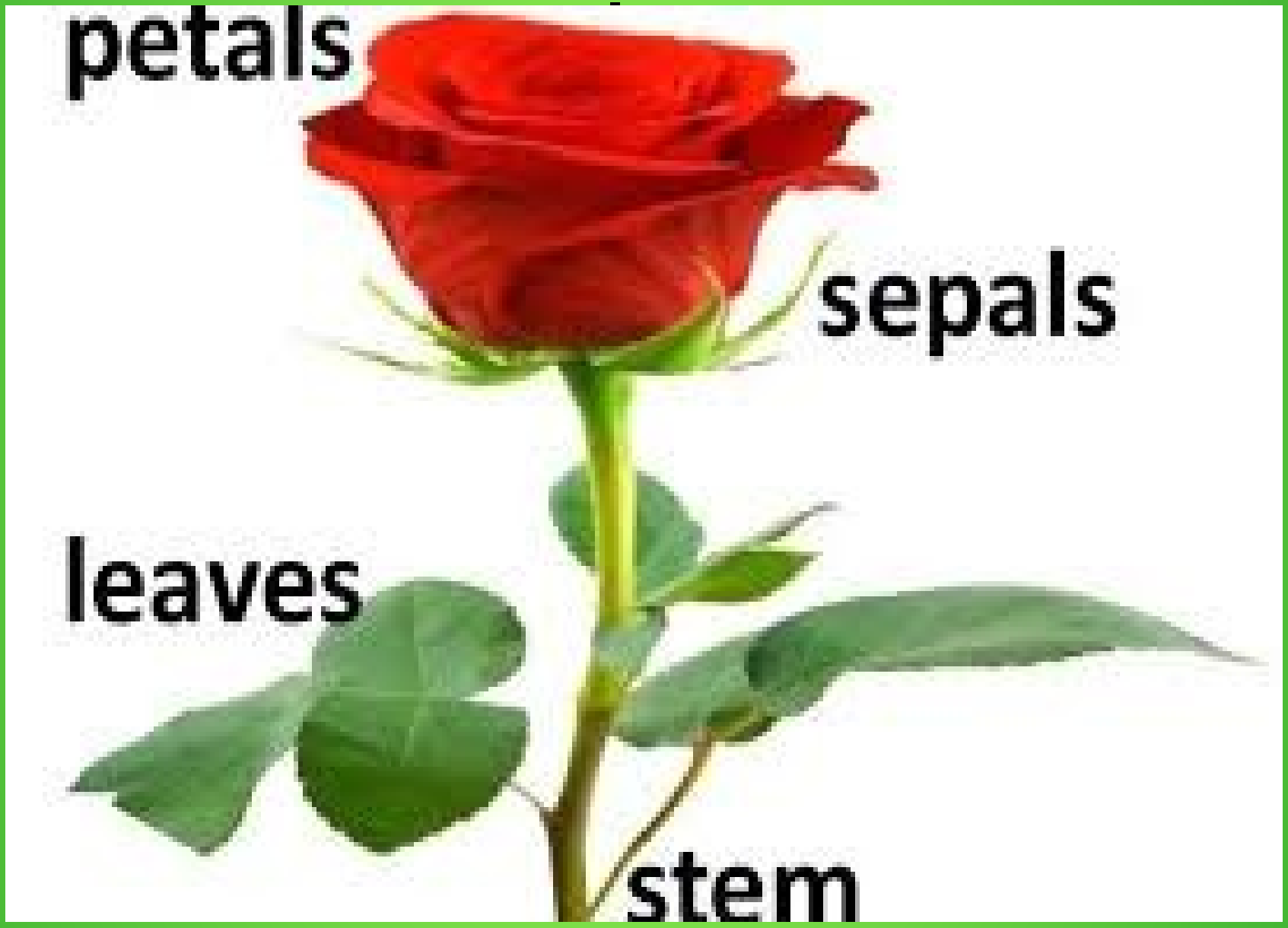
- Number of petals
- Shapes
- Size
- Colour
- Fragrance

Activity

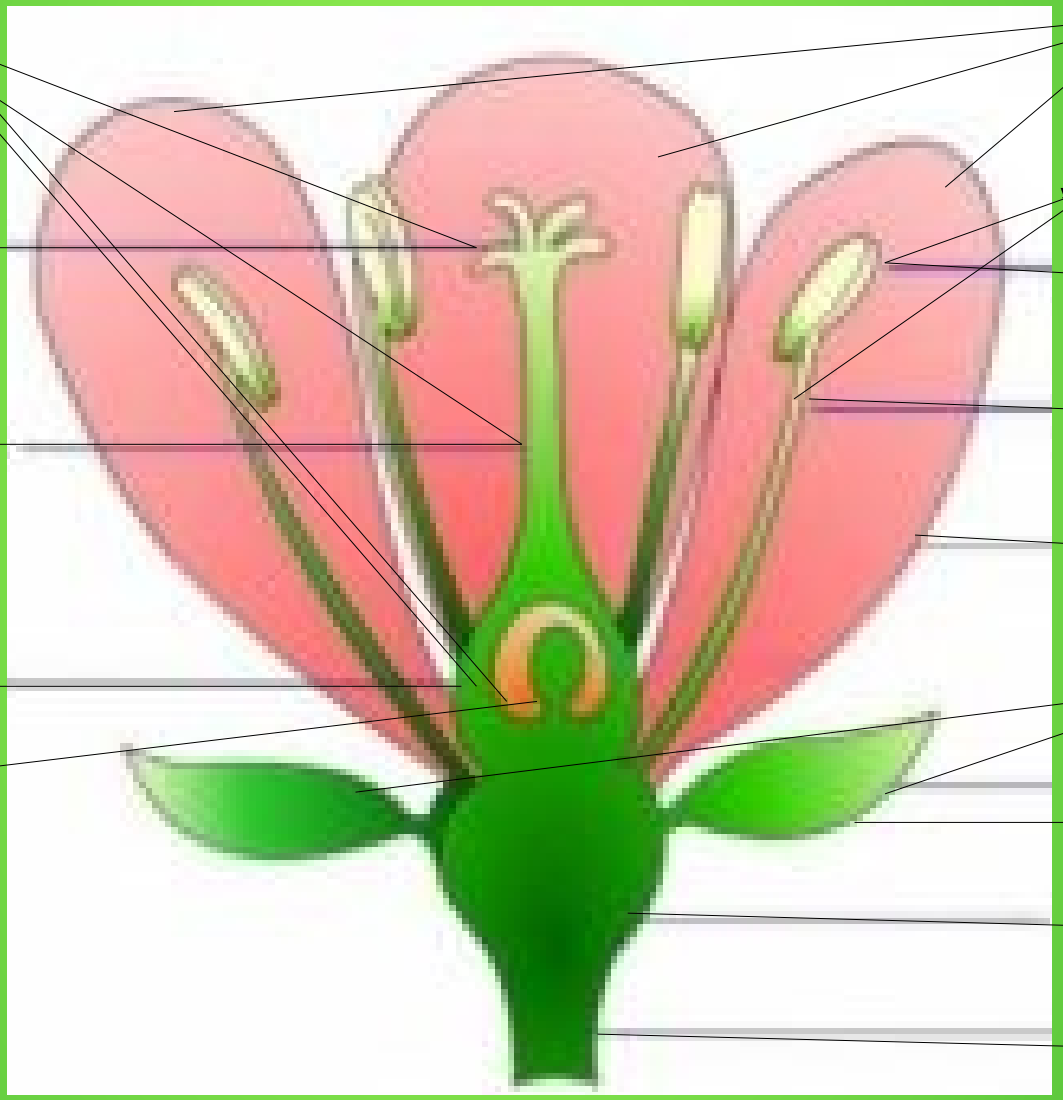
- Observe the flowers and identify their parts

- The part that connects flower to the plant..
- The part that holds petals
- The most attractive part
- …… ……
- ……. ……. …….
- ……. ……

- .


petals
sepals
leaves
stem

Parts of a flower



gynoecium

stigma

style

ovary

ovule

corolla

androecium

anther

filament

petal

calyx

sepal

thalamus

pedicel

Parts of flower and their functions.

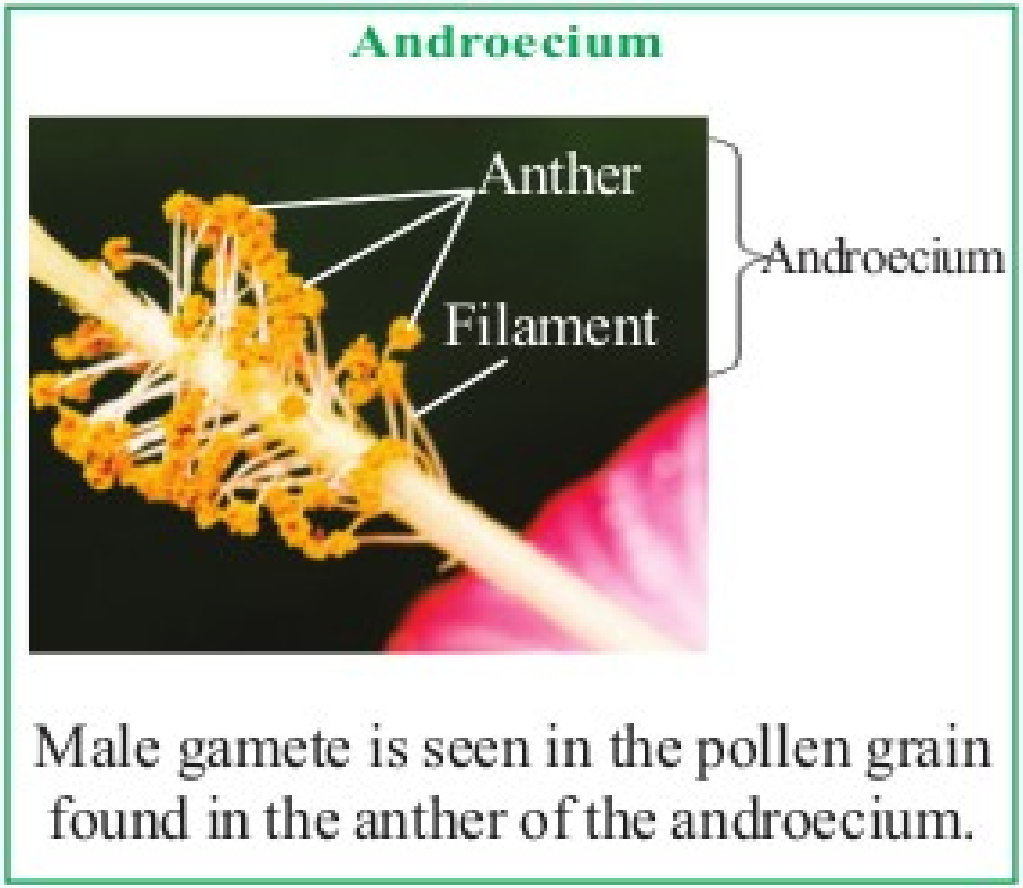
Parts	Functions
Pedicel.	Connects the flower with plant
Thalamus.	Holds different parts of flower
Calyx.	Protects the flower when it is a bud,holds petals after it blooms.
Corolla.	Provides colour , fragrance and attractiveness to the flower.[formed of petals]
Androecium.	Male reproductive part, [formed of anther and filament]
Gynoecium.	Female reproductive part,[formed of stigma,style,ovary and ovule]

Fruits and seeds

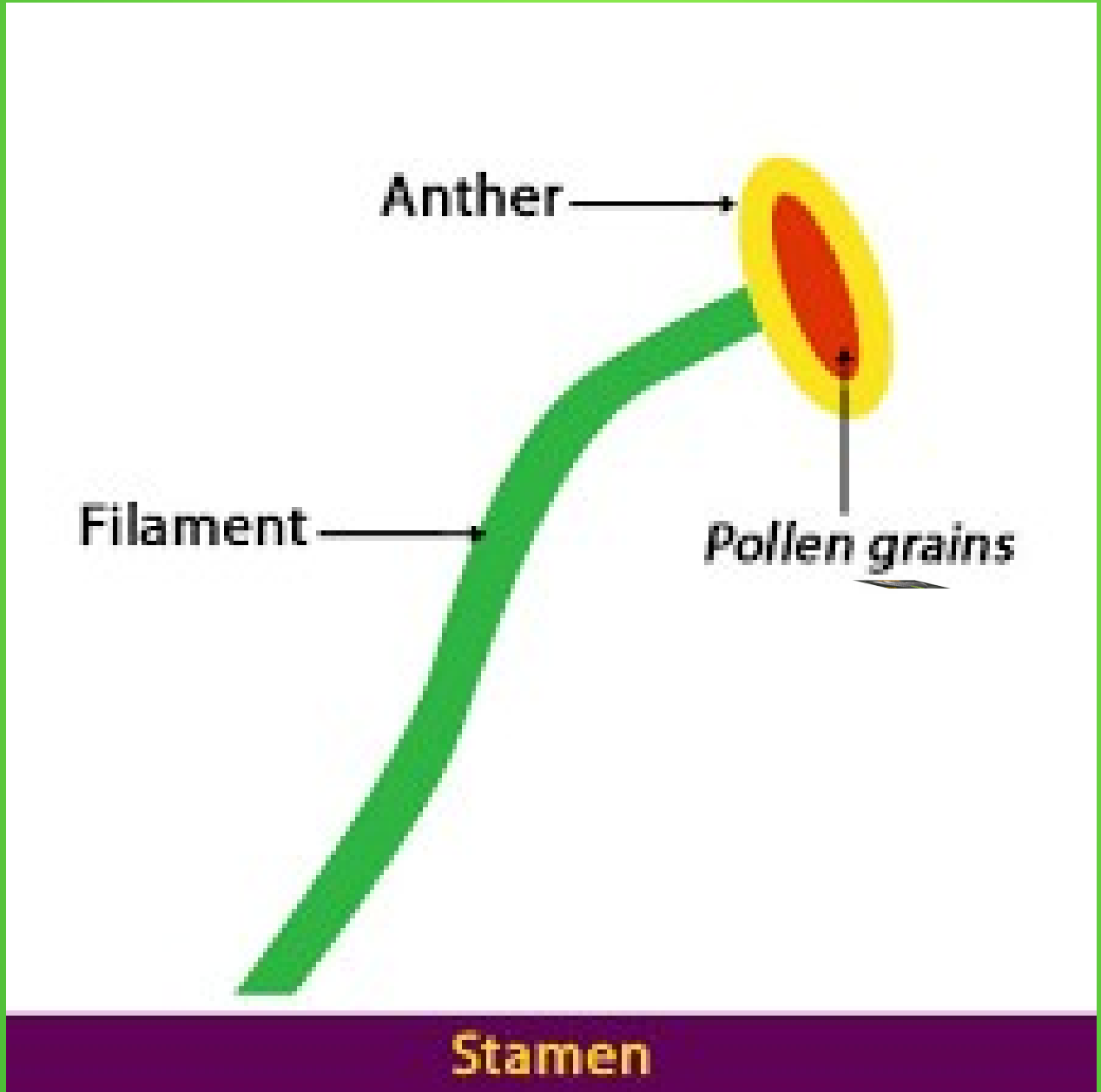
- *Where do fruits and seeds develop on a plant?*
- *What is the benefit of formation of the seed for a plant?*
- *What may be the function of flowers then?*

Take a flower and observe its androecium and gynoecium using a hand lens....

Draw and label the observed parts...



Androecium.



Gynoecium.

Observe the flowers

Do all the flowers have both androecium and gynoecium....?

Oleander

Pumpkin


Pumpkin

Bitter gourd


Bitter gourd

Clitoria

Flowers

Having both androecium and gynoecium	Having only androecium or gynoecium
hibiscus	pumpkin
oleander	Bitter gourd
mango	cucumber
brinjal	Snake gourd

Flowers

- *Flowers that have both androecium and gynoecium are called bisexual flowers and those have either androecium or gynoecium are called unisexual flowers.*
- *Flowers that have only androecium are male flowers.*
- *Flowers that have only gynoecium are female flowers.*

Male and female plant

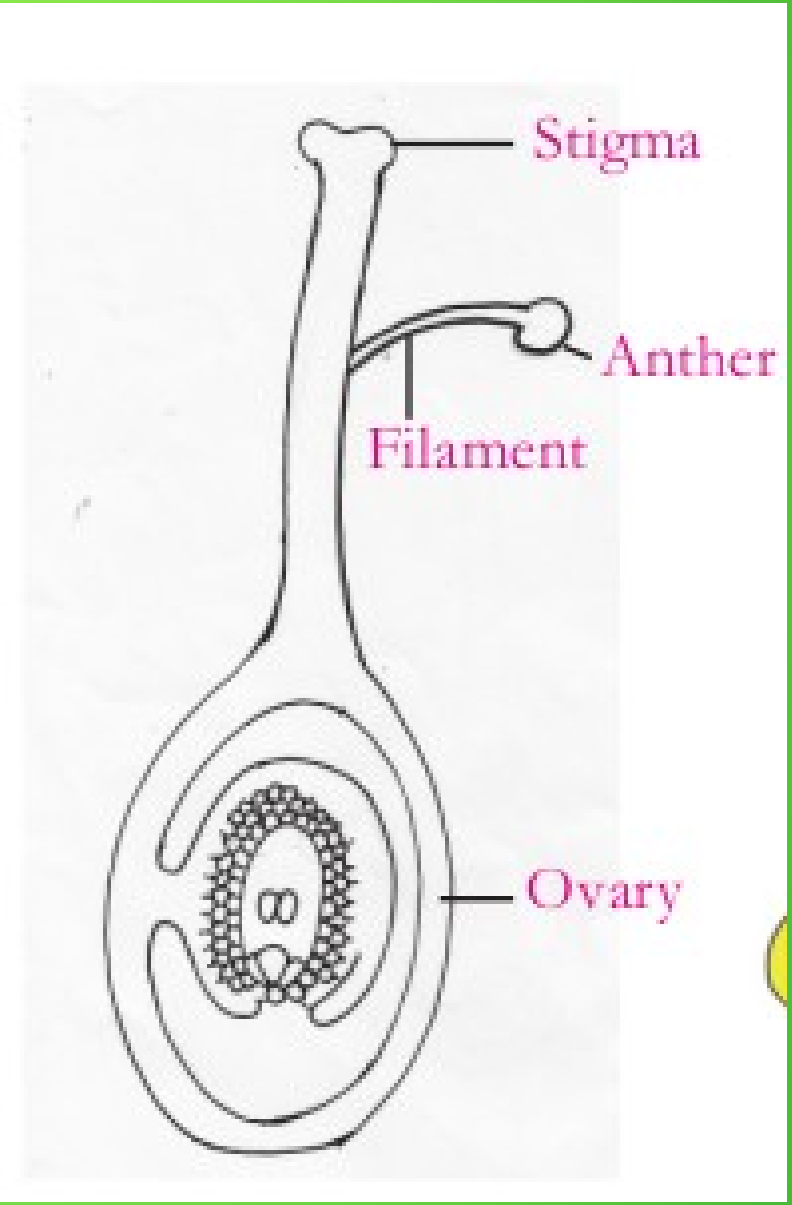
Certain plants should have either male flowers or female flowers. The plants with male flowers are the male plants and those with female flowers are the female plants.

Fan palm, gambooge and nutmeg are such types of plants.

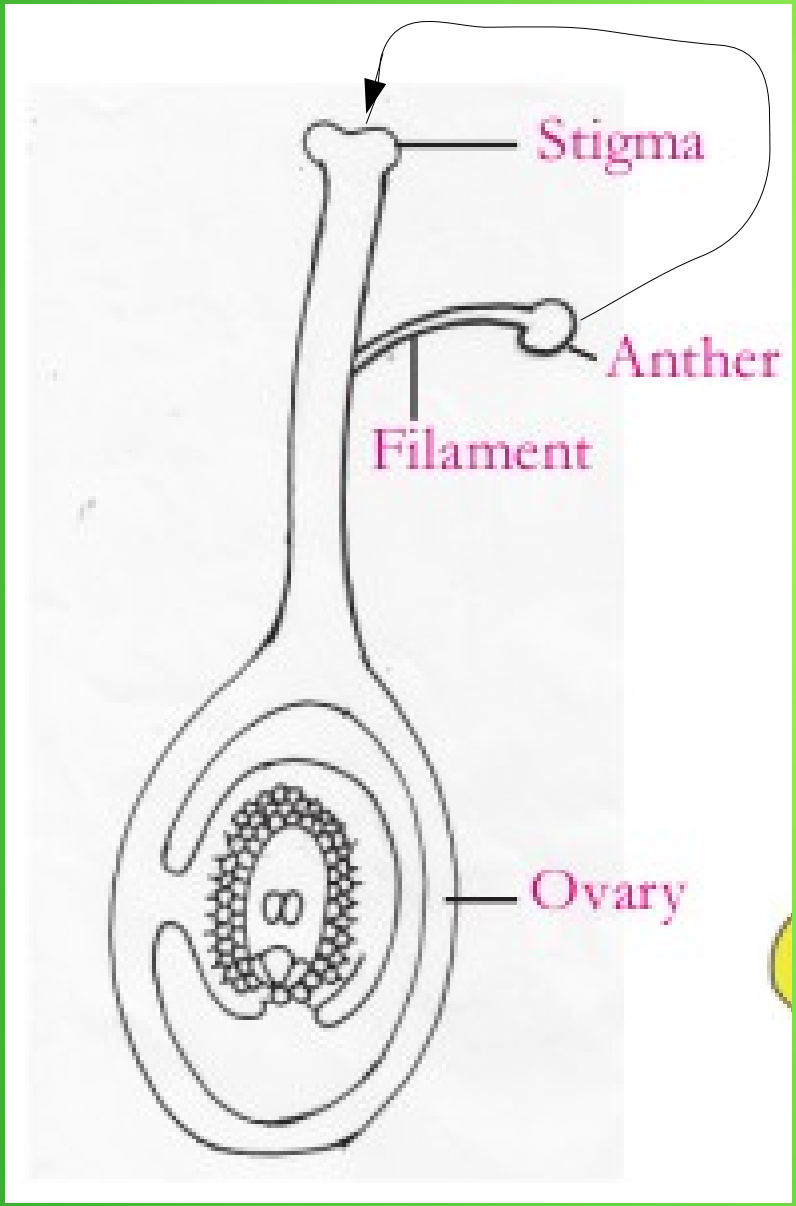
Seed formation

For the formation of fruits and seeds, the male gamete from the pollen grain should reach the ovary and fuse with egg.

Observe the figure and draw the pathway of pollen grains



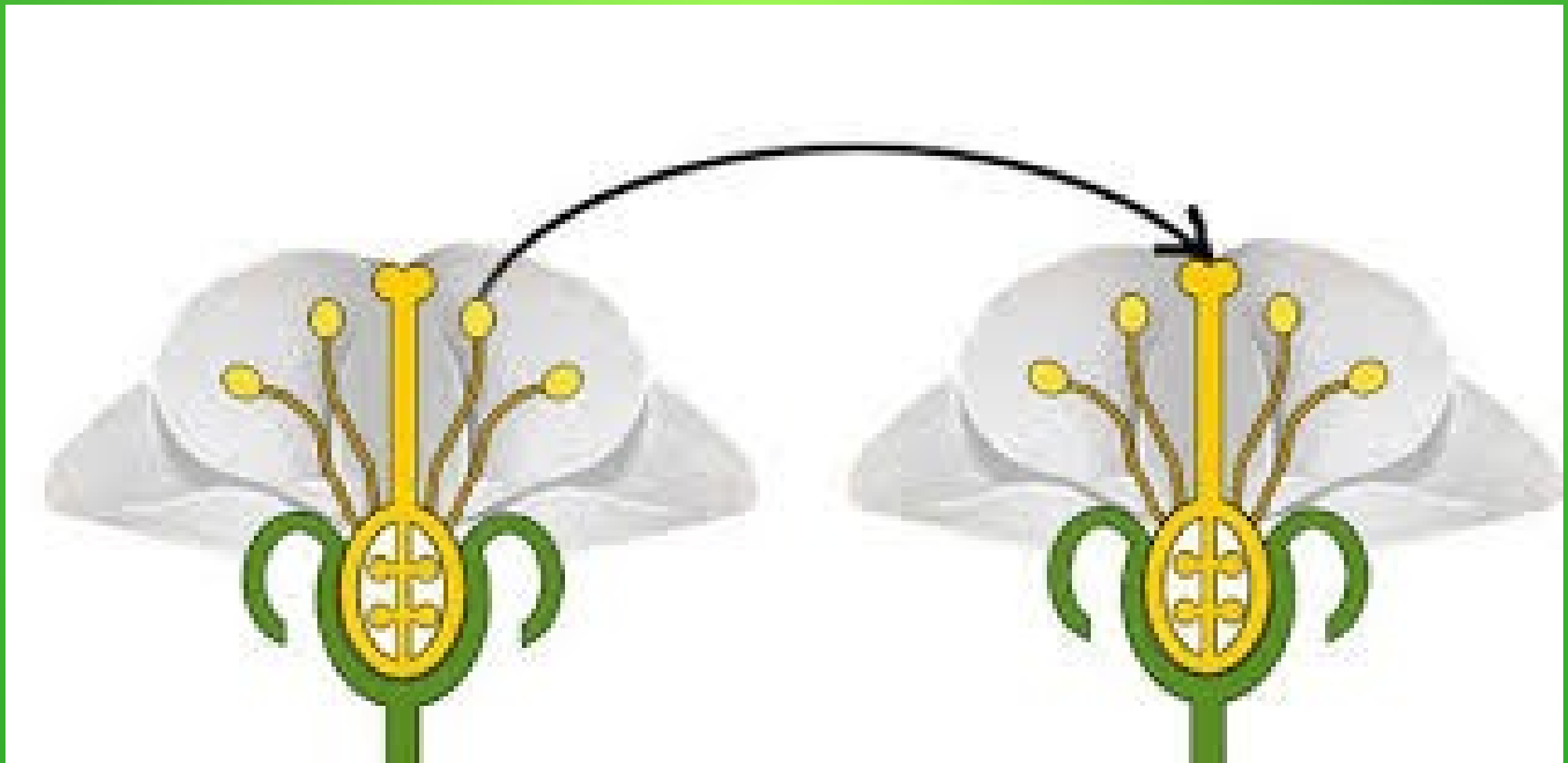
Check your answer



Pollen grains are there at the anther and the way for the male gamete into the ovary is from the stigma and through the style.

Pollination

- Transfer of pollen grains from the anther to stigma is called pollination.



Pollinating agents

- Factors that help pollination are called pollinating agents.

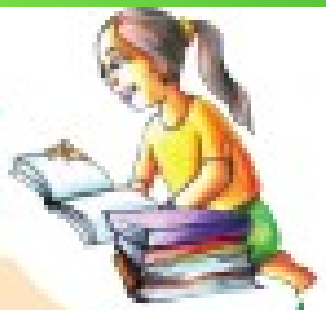
Pollinating agents

- Insects
- Birds
- Animals
- Wind
- Water
- Dew drops ..... etc

What are the peculiarities seen in flowers to attract pollinating agents ?

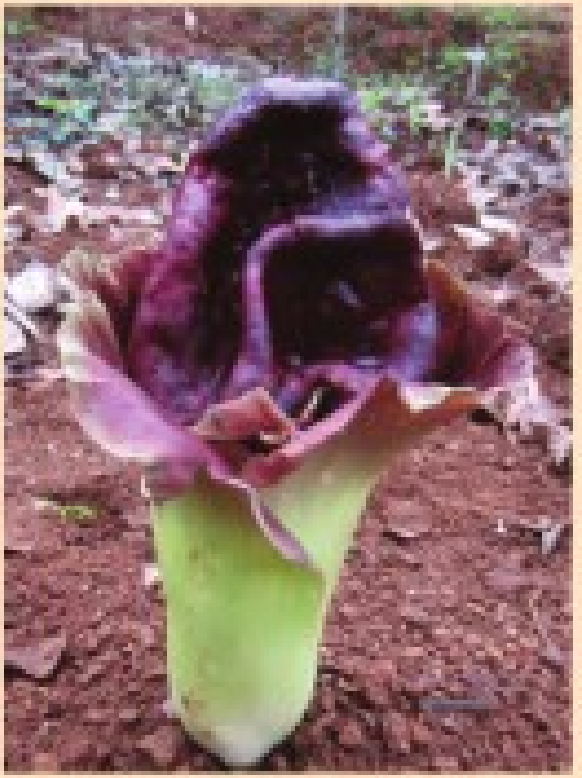
- Colour
- Fragrance
- Nectar
- Softness
- Beauty
- .....

Not only fragrance....

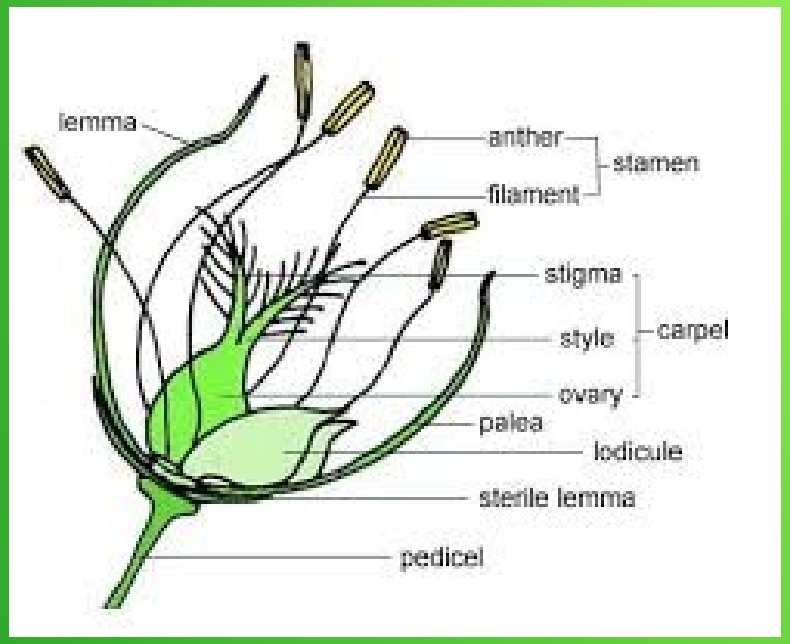


Flowers with foul odour too...

Have you ever experienced the foul smell of the elephant yam flowers? In the elephant yam and taro, pollination is done by flies. The foul odour is to attract flies.



Pollination through wind..,



- **Look at the paddy flowers,**

  -They have large number of pollen grains

  -Pollen grains are lighter in weight

  -These features help them in pollination through wind.

- *The pollination in wheat, maize, sugar cane ..etc also occurs through wind .*

Pollination through water

- *In pepper plant the transfer of pollen grains takes place by the help of moisture.*

  It is the dew drops that act as pollinating agent in pepper plant.

Other creatures as agents...

Creatures like lizards, bats, mice ... etc also act as pollinating agents.

Complete the table

Notice the features of a few flowers. Which pollinating agent among those given below, matches the features?

- Light weight pollen grains -
- Colourful flowers -
- White flowers that bloom at night -
- Pollination in moisture -

Water (dew drops), moth, wind, honey bee

Check your answers..

Notice the features of a few flowers. Which pollinating agent among those given below, matches the features?

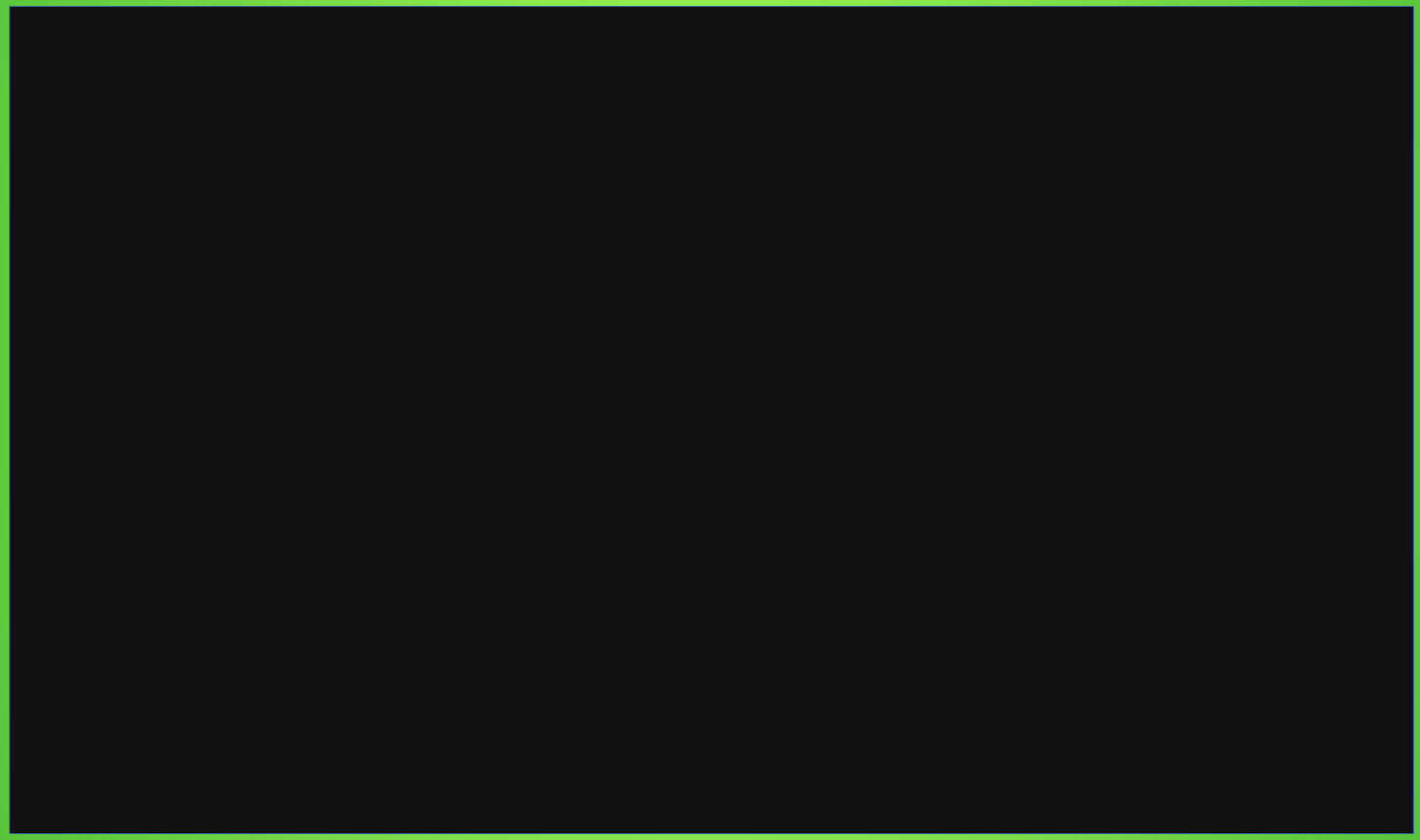
- Light weight pollen grains - wind
- Colourful flowers - honey bee
- White flowers that bloom at night - moth
- Pollination in moisture - water (dew drops)

Water (dew drops), moth, wind, honey bee

Artificial pollination

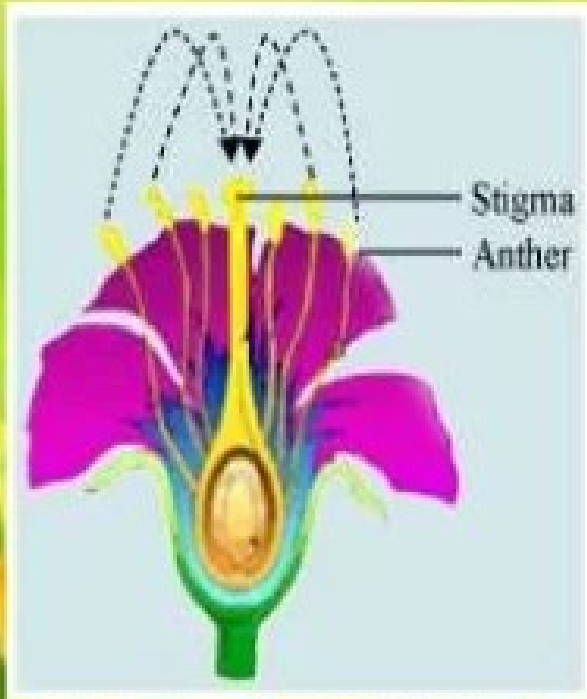
- ***The pollination that done purposively by man is called artificial pollination.***
- ***Hybrid varieties of plants are formed through this method.***

Pollination (video)



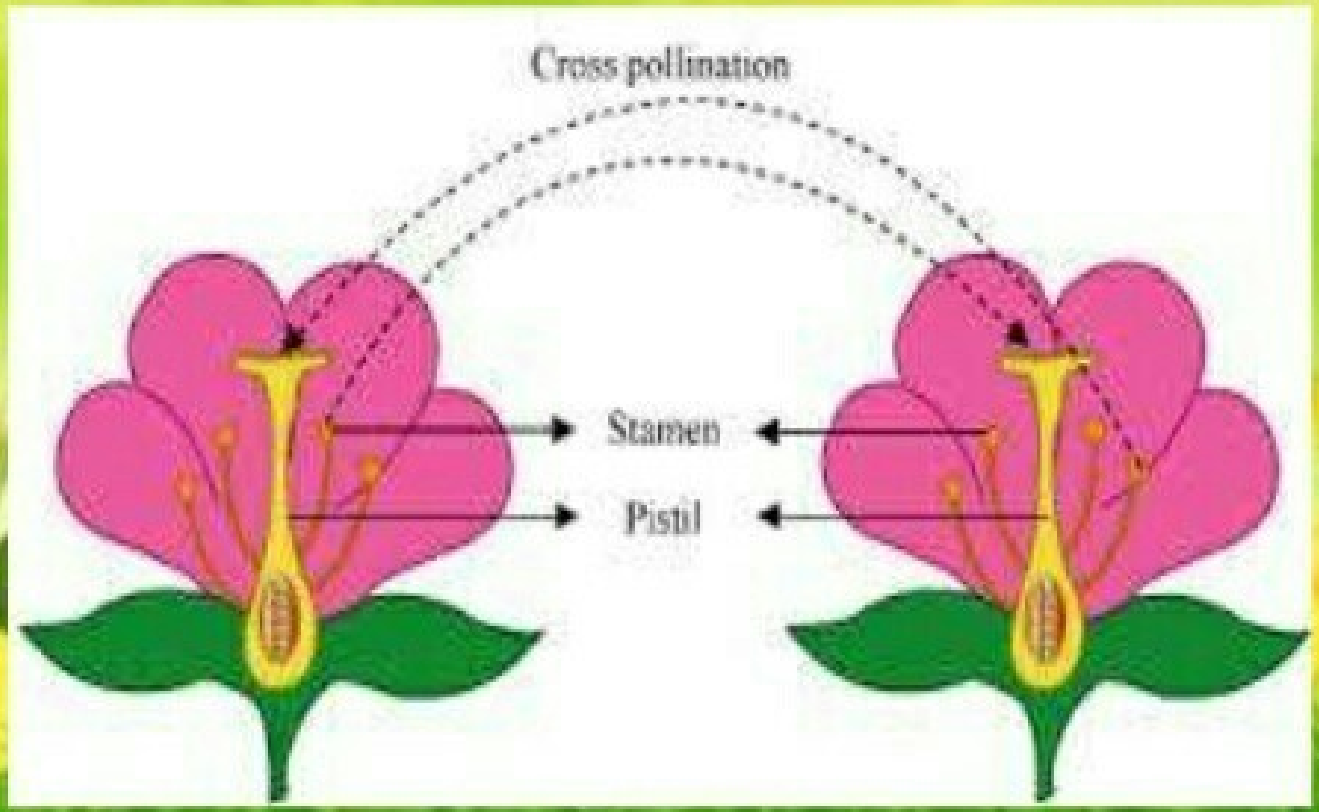
Self pollination

Self pollination : is the transfer of pollen grains from the anther to the stigma of the same flower or another flower of the same plant.

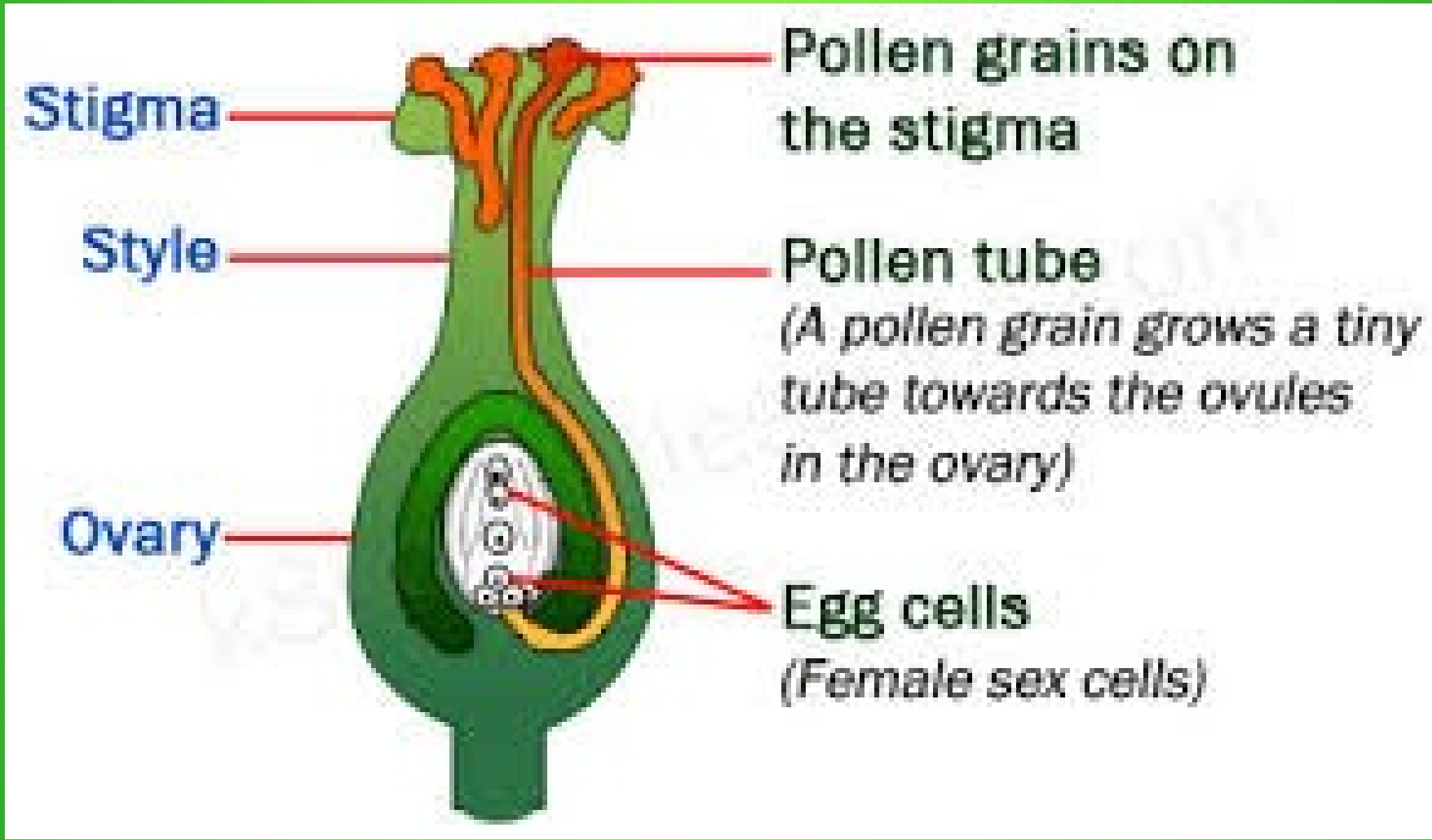


Cross pollination

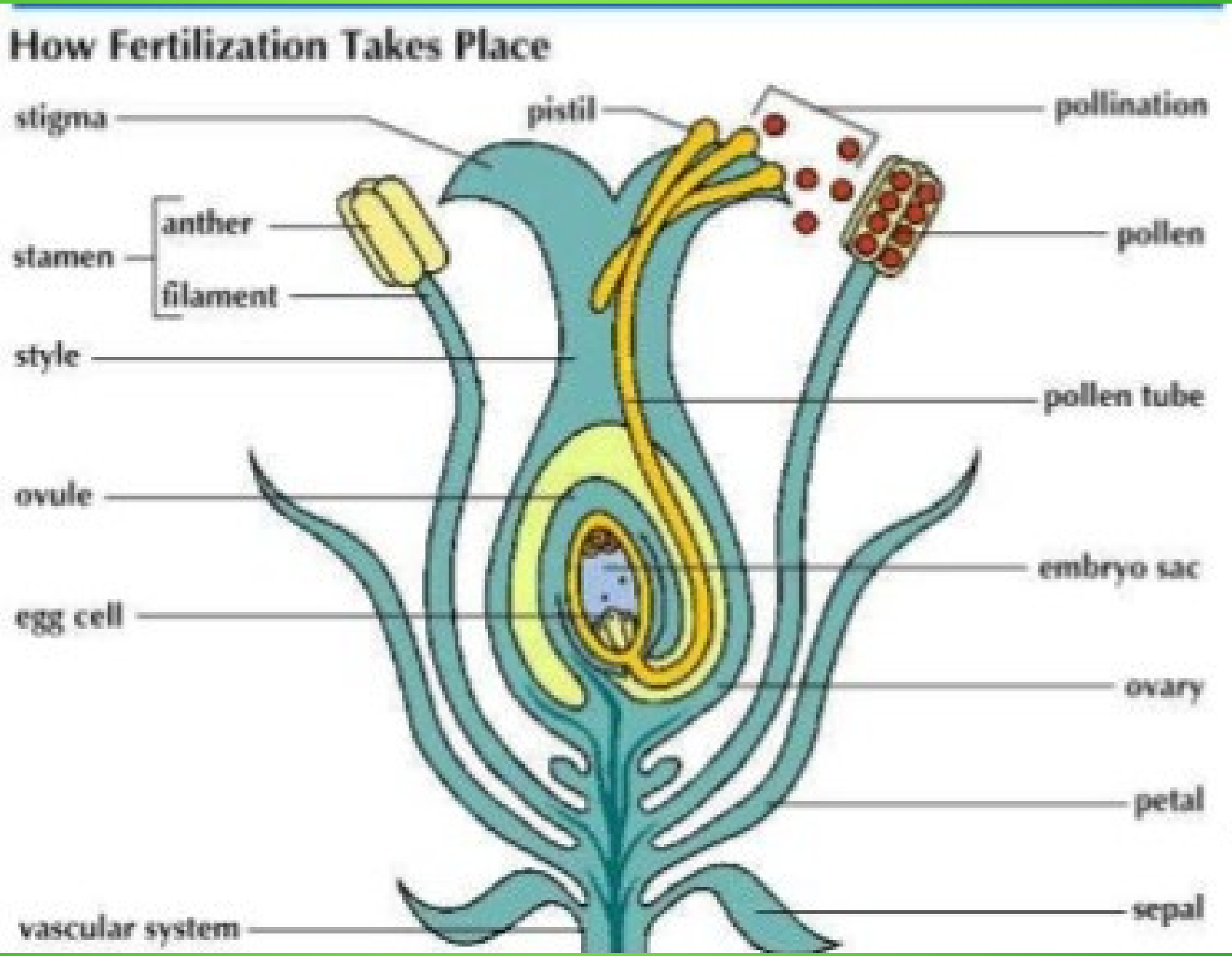
Cross pollination: is the transfer of pollen grains from the anther of one flower to the stigma of another flower of the same kind.



After pollination



Fertilization



Explain fertilization...

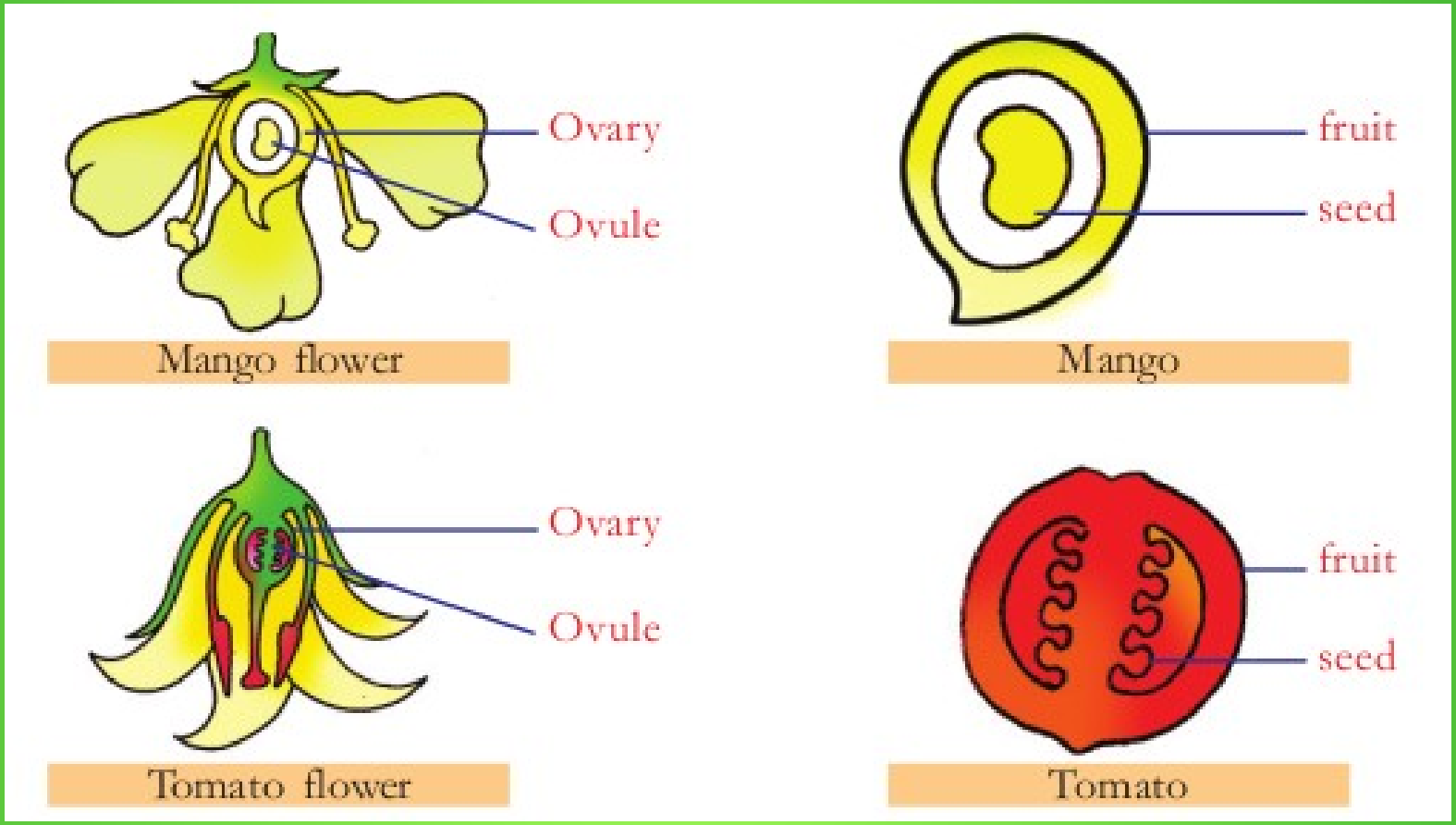
After pollination the male gamete in the pollen grains grow through the style as pollen tube, reaches the ovary and fuse with the ovule. It is called the fertilization.

After fertilization the ovary develop into fruit and the ovule develop into seed.

What changes occur in the parts of a flower when it become a fruit ?

Parts of flower	changes
Pedicel	Become the stalk of the fruit
Thalamus	Become more hard
Calyx	Holds the fruit
Corolla	Wither

Observe the figures



If only one fruit is developed from a single flower, that kind of fruit is called a simple fruit.

Why they differ....?

- How many seeds are there in a mango?
- Does a tomato have only one seed?
- What may be the reason for the difference in the number of seeds?

Difference in number of ovules

- **Find out and tabulate the fruits with only one seed and more than one seeds...**

Fruits with one seed	Fruits with more than one seed
Mango	**Tomato** ....

Aggregate fruits

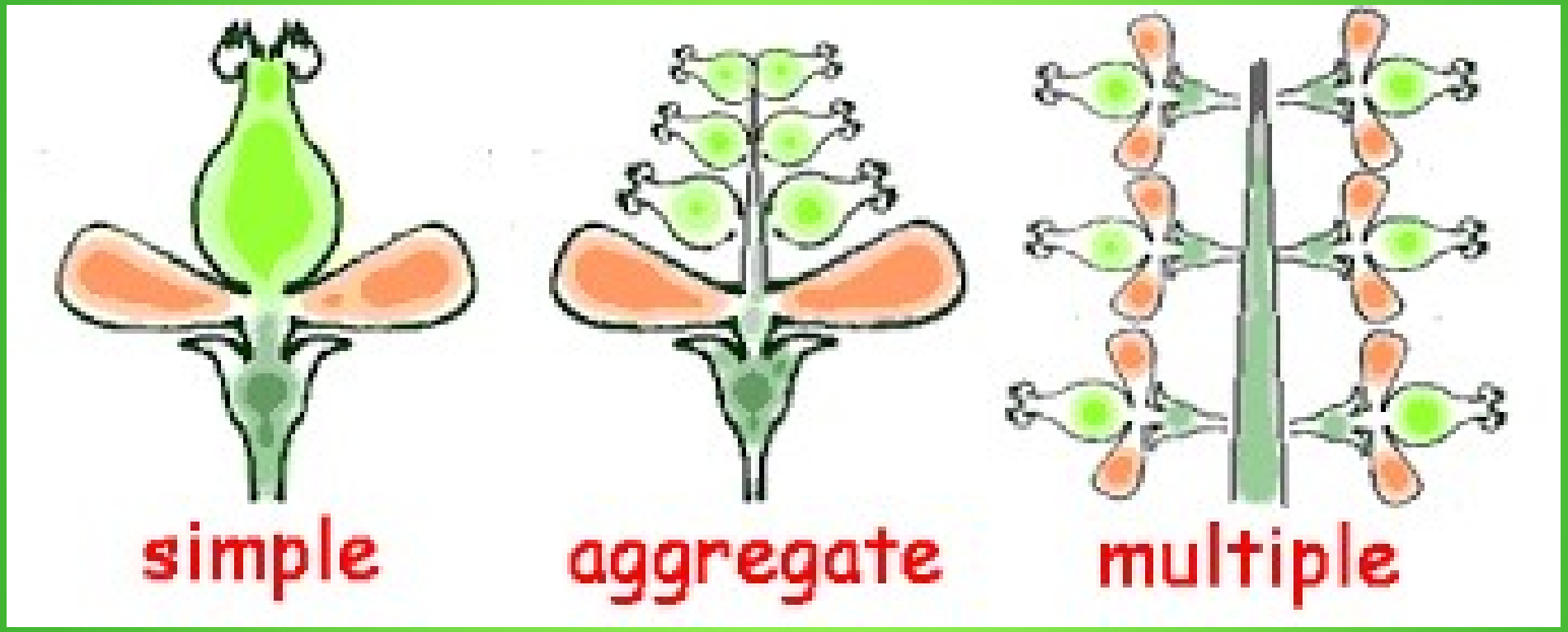
- *If more than one fruit is formed from a flower, such fruits are called aggregate fruits.*
- *Straw berry, custard apple, polyalthia etc are examples of it.*

Multiple fruits

The fruit that developed from more than one flower is called a multiple fruit.

Jack fruit, pineapple ...etc are multiple fruits

Let’s examine...



False fruits

The fruits that develop from the parts other than ovary are called false fruits.

Example:

apple --- from thalamus

cashew apple ---- from pedicel

Fruit and flower

Examine the figures given below and find out the right statement related to each fruit.

Strawberry

Chilli

Arecanut

Flowers are seen as inflorescence

More than one ovary in a flower

Flowers are seen one by one (Single flower)

Identify and tabulate the fruits as the category they belong to..