BAL BHARATI PUBLIC SCHOOL, PITAMPURA, DELHI – 110034

SUBJECT: Science

CLASS VII: Reproduction in Plants

Week: 18th Jan to 22nd January, 2021

No of blocks: 2 or 3

TOPIC: Reproduction in plants

GUIDELINES FOR STUDENTS:

Dear Students,

- Refer to the following content of the chapter.
- These notes will help you to understand the concept of the lesson.
- Do the assignment questions in the Science notebook.
- Suitable Video links have been provided for better understanding of the concept.
- Do read NCERT too for better understanding of these concepts.

SUBTOPICS: Modes of reproduction

- Sexual reproduction- Pollination and fertilisation
- Fruits and seed formation
- Seed dispersal

INSTRUCTIONAL AIDS /RESOURCES:

- NCERT LINK FOR THE CHAPTER:

https://ncert.nic.in/ncerts/l/gesc112.pdf

- YouTube Links

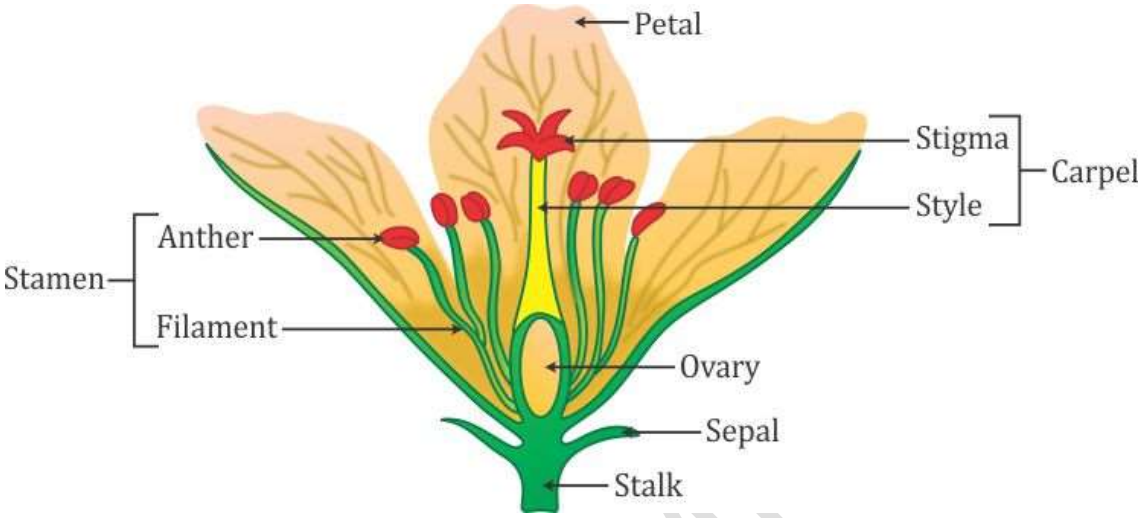
LEARNING OUTCOMES:

Learners will be able to: -

- Define sexual reproduction, pollination and fertilization.
- List the agents of pollination.
- Describe pollination and fruit formation.
- Elaborate the role of seed dispersal for plants.

Introduction:

- Flowers are the reproductive parts of a plant.
- The **stamen** is the male reproductive part.
- The **pistil/ carpel** is the female reproductive part.

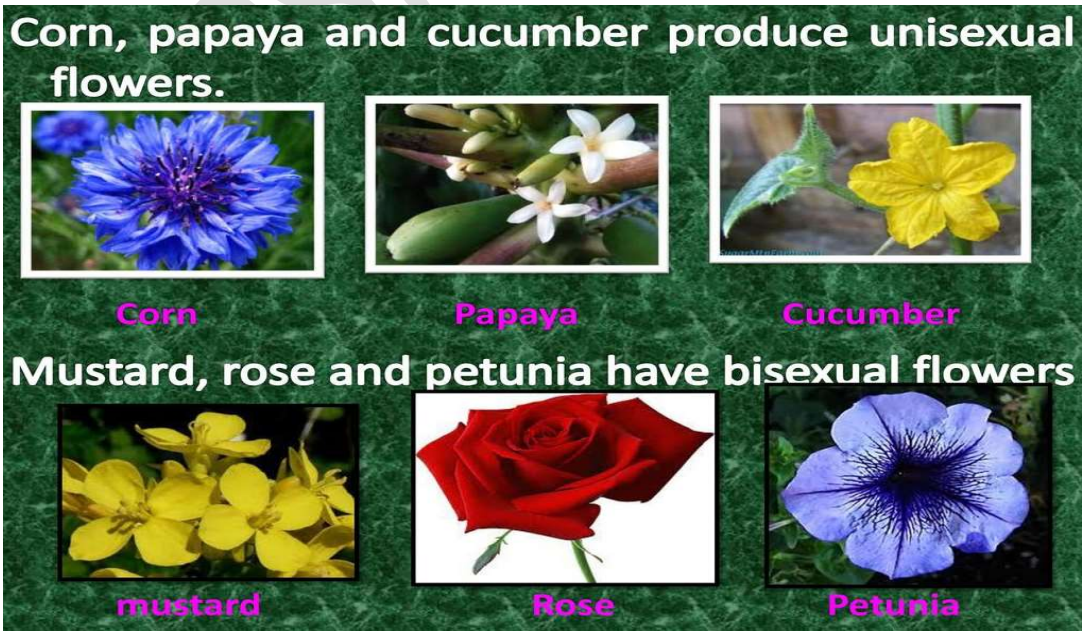


Activity 1:

https://youtu.be/yLl7iEpqxZA

Take a mustard/china rose/petunia flower and separate its reproductive parts. Study the various parts of a stamen and pistil. The flowers which contain either only the pistil or only the stamens are called **unisexual flowers.** Corn, papaya and cucumber produce unisexual flowers. The flowers which contain both stamens and pistil are called **bisexual flowers**, for example: mustard, rose and petunia.

https://youtu.be/A00TlmJejx0



Both the male and the female unisexual flowers may be present in the same plant or in different plants. Can you identify the anther and the filament of a stamen?

Anther contains pollen grains which produce male gametes. A pistil consists of stigma, style and ovary. The ovary contains one or more ovules. The female gamete or the egg is formed in an ovule.

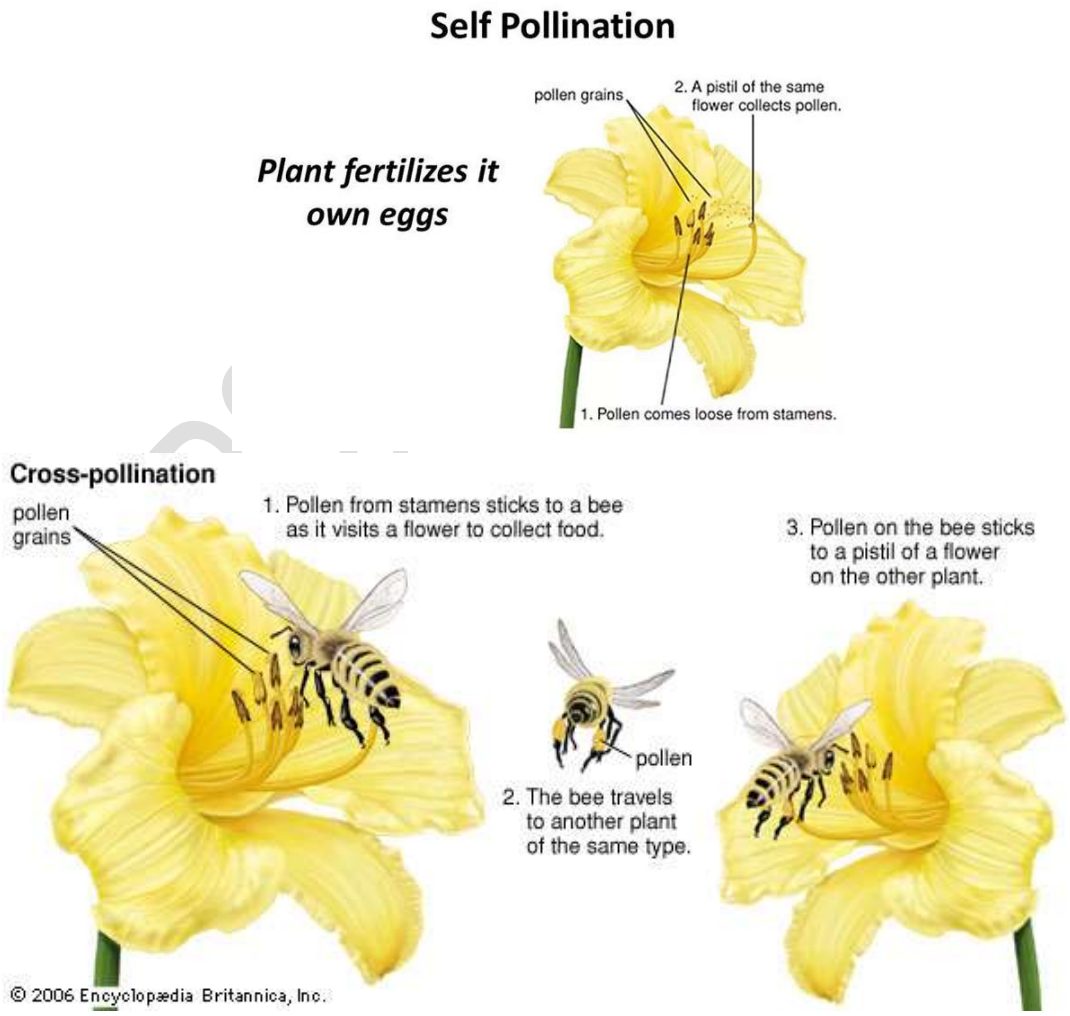
In sexual reproduction a male and a female gamete fuses to form a zygote.

Pollination:

Generally, pollen grains have a tough protective coat which prevents them from drying up. Since pollen grains are light, they can be carried by wind or water. Insects visit flowers and carry away pollen on their bodies. Some of the pollen lands on the stigma of a flower of the same kind. The transfer of pollen from the anther to the stigma of a flower is called **pollination.**

There are two types of pollination: **Self-pollination and Cross pollination.**

If the pollen lands on the stigma of the same flower it is called **self-pollination**. When the pollen of a flower lands on the stigma of another flower of the same plant, or that of a different plant of the same kind, it is called **cross-pollination.**

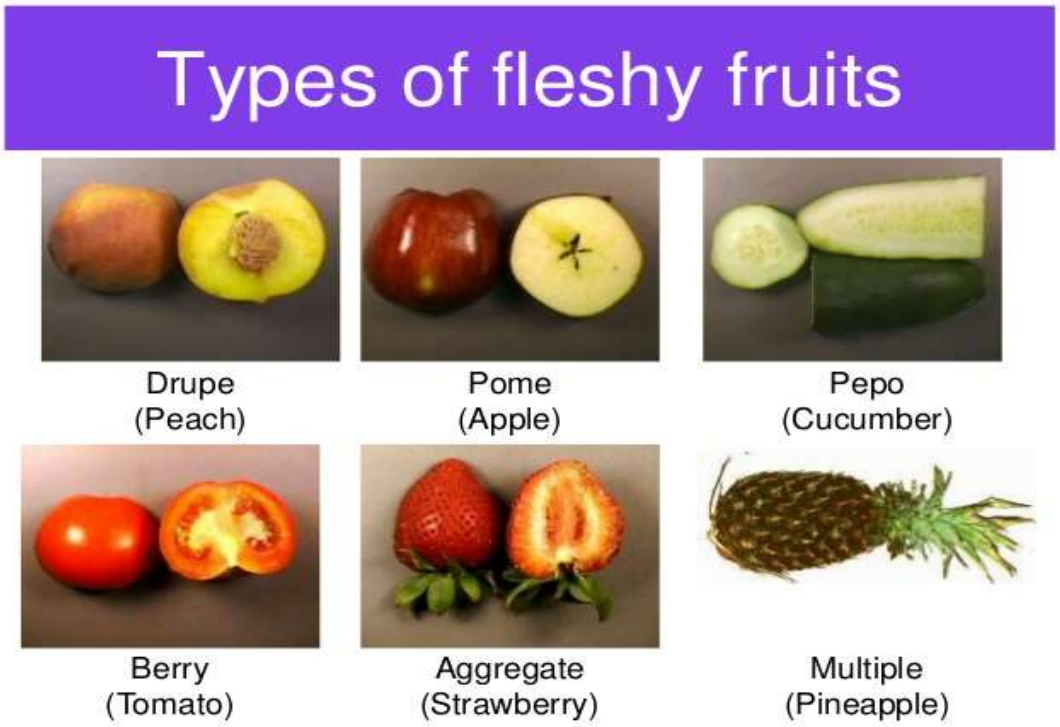


Fertilisation:

The process of fusion of male and female gametes (to form a zygote) is called fertilisation. The cell which results after fusion of the gametes is called a **zygote.** The zygote develops into an embryo.

Fruit and seed formation:

After fertilisation, **the ovary grows into a fruit** and **other parts of the flower mostly fall off**. The fruit is the ripened ovary. **The seeds develop from the ovules**. The seed contains an **embryo** enclosed in a protective seed coat. Some fruits are fleshy and juicy such as mango, apple and orange. Some fruits are hard like almonds and walnuts.



Dry Fruits

Seed dispersal

In nature, same kind of plants grow at different places. This happens because seeds are dispersed to different places. Sometimes after a walk through a forest or a field or a park, you may have found seeds or fruits sticking to your clothes.

Did you try to observe how these seeds were clinging to your clothes? What do you think will happen if all seeds of a plant were to fall at the same place and grow there? There would be severe competition for sunlight, water, minerals and space. As a result, the seeds would not grow into healthy plants.

Advantages of Seed Dispersal:

- Plants benefit by seed dispersal.
- It prevents competition between the plant and its own seedlings for sunlight, water and minerals.
- It also enables the plants to invade new habitats for wider distribution.

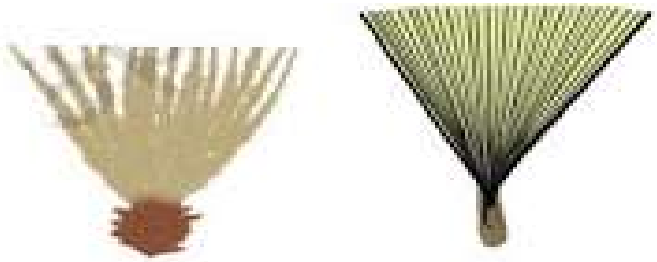
Agents of Seed Dispersal:

Seeds and fruits of plants are carried away by wind, water and animals.

Winged seeds such as those of drumstick and maple, light seeds of grasses or hairy seeds of aak (Madar) and hairy fruit of sunflower, get blown off with the wind to faraway places. Some seeds are dispersed by water. These fruits or seeds usually develop floating ability in the form of spongy or fibrous outer coat as in coconut. Some seeds are dispersed by animals, especially spiny seeds with hooks which get attached to the bodies of animals and are carried to distant places. Examples are Xanthium and Urena. Some seeds are dispersed when the fruits burst with sudden jerks. The seeds are scattered far from the parent plant. This happens in the case of castor and balsam.

Drumstick

Maple



(a) (b)

(a) The hairy fruit of sunflower and (b) hairy seed of madar (ask)

Xanthium

Let's do an Assignment:

Q1. Identify the process/ parts of reproduction in flowers in the given pictures:

(A)

(B)

(C)

Q2. Search Internet for fruits and collect information. Make drawings of the different fruits. Look for any special characteristics in the fruits and their seeds.

Q3. Define Pollination. Explain its two types with the help of diagrams.

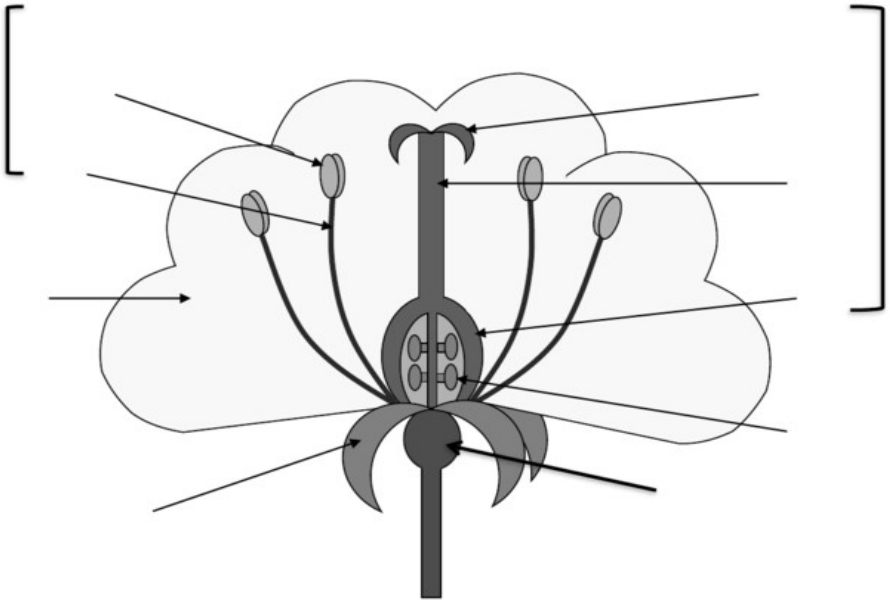
Q4. How does seed dispersal prove advantageous for the plants?

Q5.

Sexual Reproduction in Plants

Structure of a Flower

Label the diagram below:



Complete the exercise below using the most appropriate word from the list below:

Carpel Stamen Stigma Anther Ovary Ovule Pollen

Filament Style

A word may be used more than once.

The male part of the flower called the _____ consists of the

_____ and _____. The female part of the flower is called the

_____ and consists of the _____, _____ and

_____. The male gamete is made in the _____ and is found

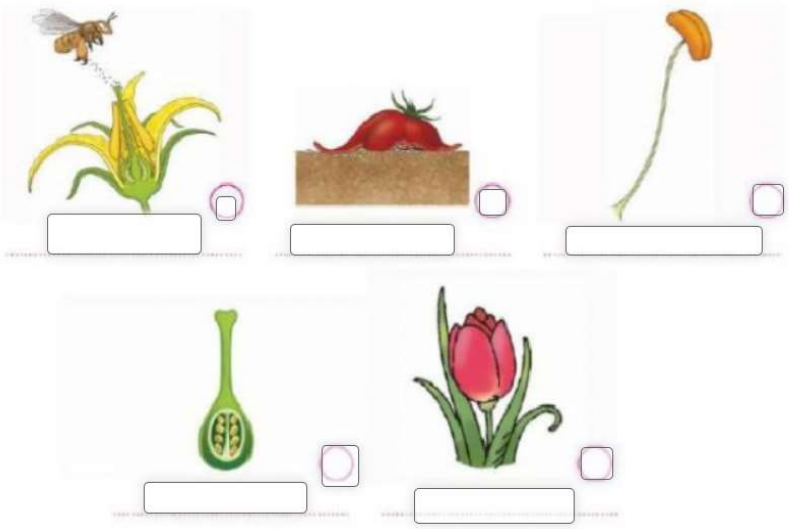
inside the _____ grain. The female gamete is found in the _____

and is called an _____.

Match the flower part with its correct function; the first one has been done for you.

Q6.

2 Label and number the pictures



****