



Name - _____

CLASS / SEC _____

Date – 09.04.2020

NEW PLANTS FROM SEEDS (Germination of Seed)

From Activity 1 (Reference to previous topic on structure of seed) you must have observed that fruits like melon and watermelon produce a large number of seeds. Ever wondered, why??

(To be done in notebooks)

Why do plants produce so many seeds? Plants produce many seeds because all the seeds do not grow into new plants. Some reasons for this are given here.

- Some seeds are not healthy and do not germinate.
- Some seeds are destroyed by wind or heavy rains.
- Some seeds are eaten by animals, insects, and birds.
- Some seeds do not get the right conditions to germinate.

So, we can say that a seed will grow into a new plant only when it gets the **right conditions to germinate**.

GET SET TO EXPERIMENT!!!



Activity-1 (To be performed only for observations)

To study the conditions required for seed germination

You will need: Kidney bean seeds, cotton wool, four petri dishes and water

What to do: Take four petri dishes. Place a piece of cotton in each dish. Take a few seeds and put some in each dish. Now, follow the given steps for each dish.

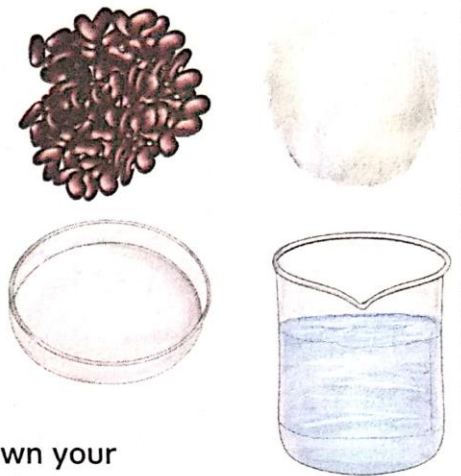
Dish 1: Keep this dish in a place where it gets adequate air and sunlight. The cotton should be moist.

Dish 2: Place the second dish in a refrigerator and keep the cotton moist.

Dish 3: Place this dish where it can get adequate air and sunlight. Do not wet the cotton.

Dish 4: Place this dish where it can get adequate sunlight. Keep the seeds and the cotton dipped in water.

You will see: Observe the four dishes for a few days. Note down your observations. In which dish have the seeds started germinating?

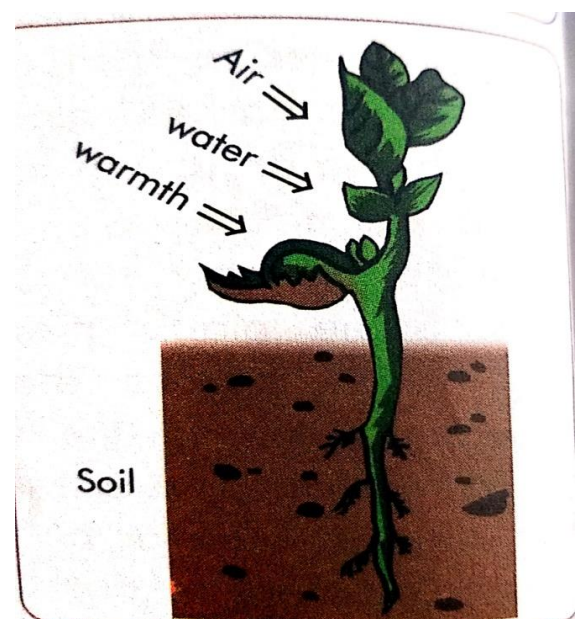


Dish 1	
Dish 2	
Dish 3	
Dish 4	

Result: Only the seeds in dish 1 germinate. This shows that air, water and sunlight are necessary for germination. Water helps the seed coat to become soft so that the baby plant can come out. Air provides oxygen for the seed to breathe. Sunlight provides warmth to the seed so that it can grow.

(To be copied in the notebooks along with the diagram)

What are the right conditions for a seed to grow into a new plant? These are—right amount of air, water, light, and warmth. If these conditions are fulfilled, a seed grows into a new plant called **seedling**. This process of a seed growing into a plant is called **germination**.



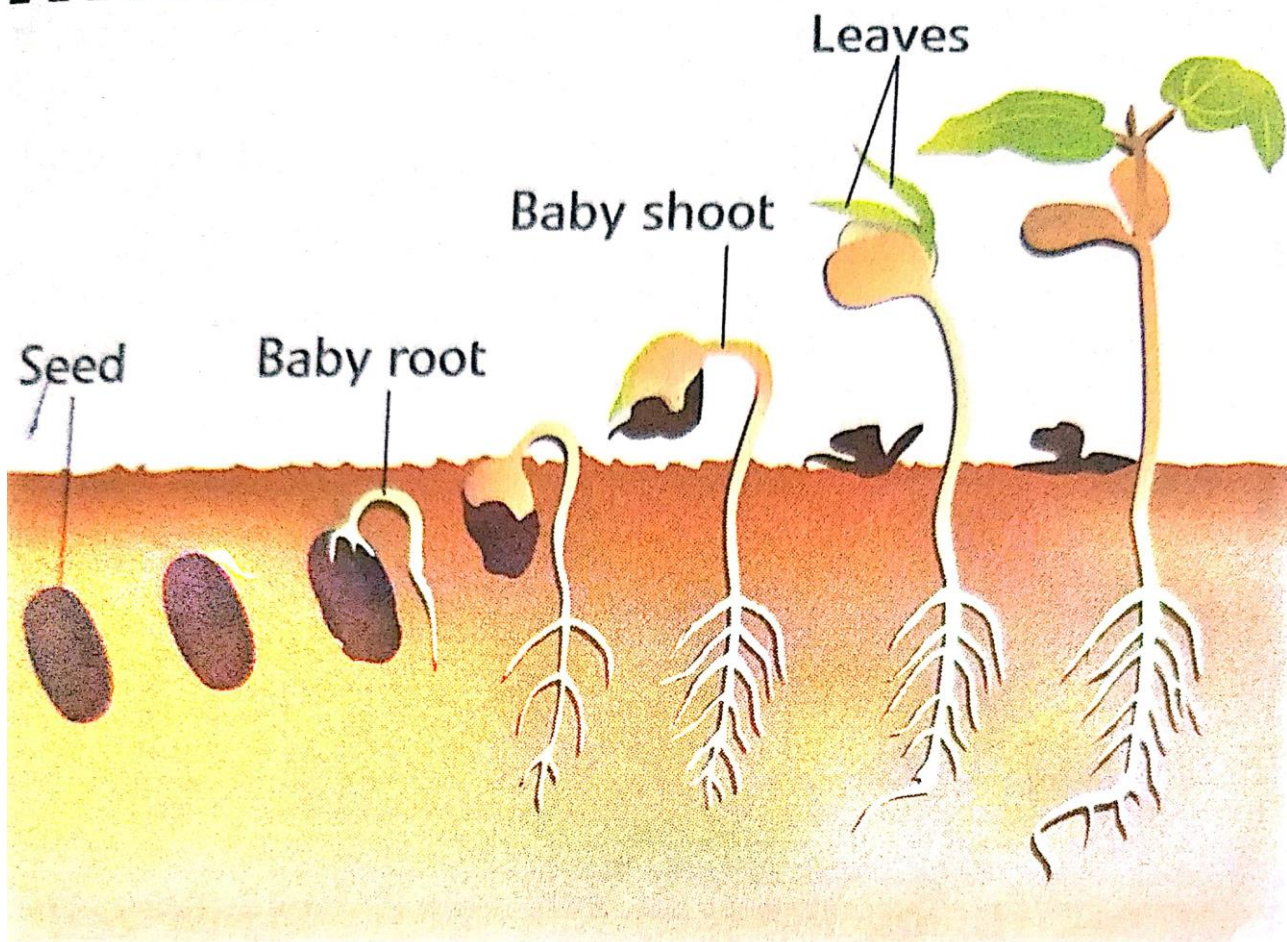
Let's Understand the process of Germination.....

(To be copied in the notebook along with the diagram)

Germination

The development of a seed into a seedling is not a single-step process. Before growing into a fully grown plant, a seed has to go through a number of stages. These stages are as follows:

- A seed is sown in the soil. It is watered daily so that it remains moist and the seed coat can be broken easily. It gets air from the atmosphere and warmth from the sun.
- The seedling breaks the seed coat and comes out of the seed. It obtains its food firstly from the cotyledons and then from the soil.
- The seedling develops roots and shoot.
- The seedling now develops leaves and branches and finally grows into a plant.



▲ Stages of seed germination

References:-

- 1) <https://www.youtube.com/watch?v=TE6xptjgNR0>
- 2) <https://www.youtube.com/watch?v=mgSzn-RJ3Zg&t=113s>

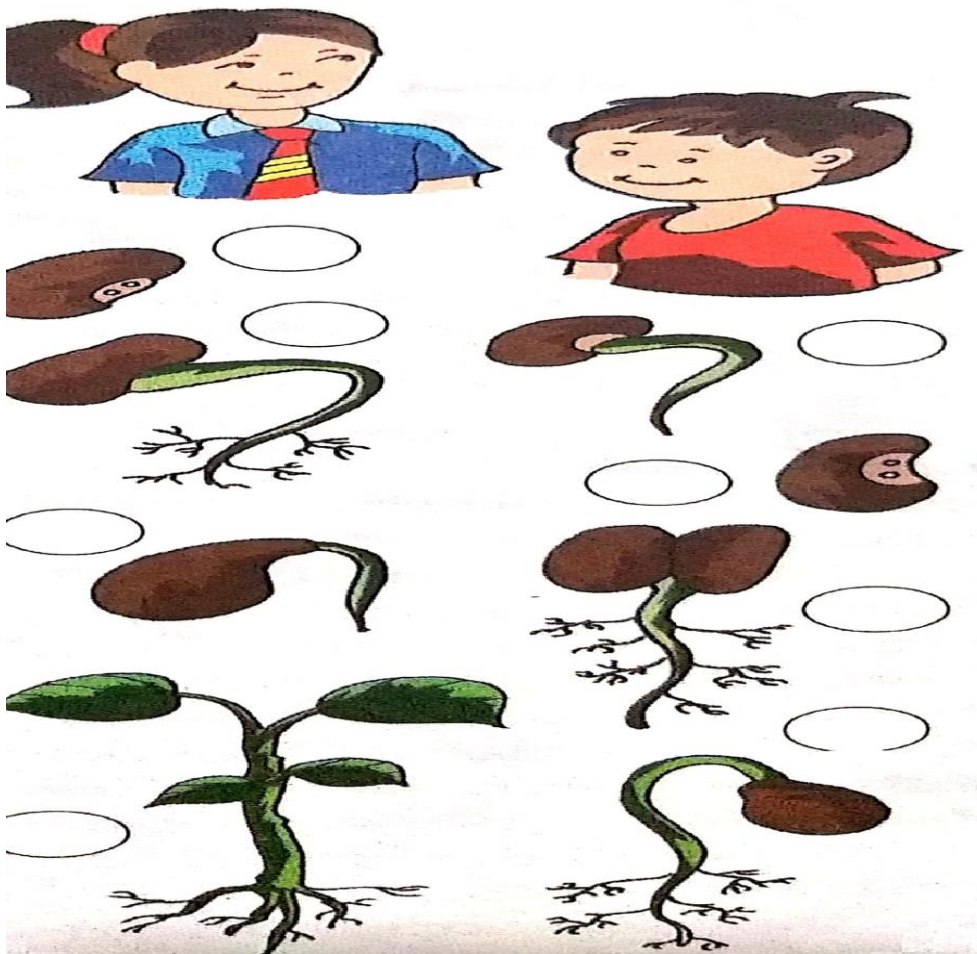
Recap Zone:-

- 1) A seed needs air, warmth, water and good soil to germinate.
- 2) Development of a seed into a seedling is called germination.

Fun Zone!! (JUST FOR PRACTICE!! NOT TO BE DONE IN THE NOTEBOOK)

Ques. Mita, the class monitor, had arranged the germinating seeds according to their stages of germination. Bhupi, the class bully mixed them up!!

Help Mita by writing the number in the space given to show the correct order of the different stages of germination.



Put on your thinking caps :- (Questions 1 and 2 are to be done in the notebook)

Ques1. Write True/False:-

- a) The process of growing a seed into a seedling is called reproduction.
- b) A seed germinates in the presence of air, warmth, water and good soil.

Ques2. Explain the following observations giving reasons (HOTS):-

- a) A papaya has many seeds. Each papaya seed can grow into a new tree. However, that does not happen. Why?
- b) Seeds kept in the refrigerator do not germinate. Why?

FUN TIMES CONTINUED... (Not to be done in notebook)

Ramu the farmer has to pack the seeds into these sacks but his son Bapi has mixed up the spellings. Help him by drawing the picture of the seed on each sack and writing the correct name in the space given!

Enhance your Life Skills....

Sprout a few seeds of moong, black gram with the help of your mother.

Prepare a delicious salad out of it by chopping some green chillies, onions, tomatoes and paneer etc. to it.