QADIMS LUMIÈRE

Montessori to Matric O & A Level
School & College

UNIVERSITY TOWN PESHAWAR,

13th JUNE,SUMMER VACATION TASK

CLASS 5TH

SCIENCE

MUSLIM SCIENTIST:-

Work of Muslim scientist in field of plants:-

Islamic scholars made significant contributions to the field of botany, particularly in the study of plants and their diseases. One of the leading botanists from the Islamic period was Al-Dinawari, who wrote 'The Book of Plants,' a landmark book on botany. Another famous Islamic botanist was Ibn al-Baitar, who is considered one of the greatest botanists of Islam and the Middle Ages. Muslim scholars like Ibn Haitham, Ibn Hazm, and Ibn-Taimiya made significant contributions to the development of experimental science, emphasizing the importance of sense perception and induction in acquiring knowledge.

FAMOUS BOOKS OF MUSLIM SCIENTIST ON PLANTS:-

Here is a list of famous books of Islamic scientists in the field of botany, with an introduction to each book:

- **Al-Havi (al-Havi fi al-Talab) by Abu Bakr Muhammad ibn Zakariya Razi (Razi):** This valuable medical encyclopedia examined about 366 plants. It is one of the most comprehensive and influential works on botany in the Islamic world.

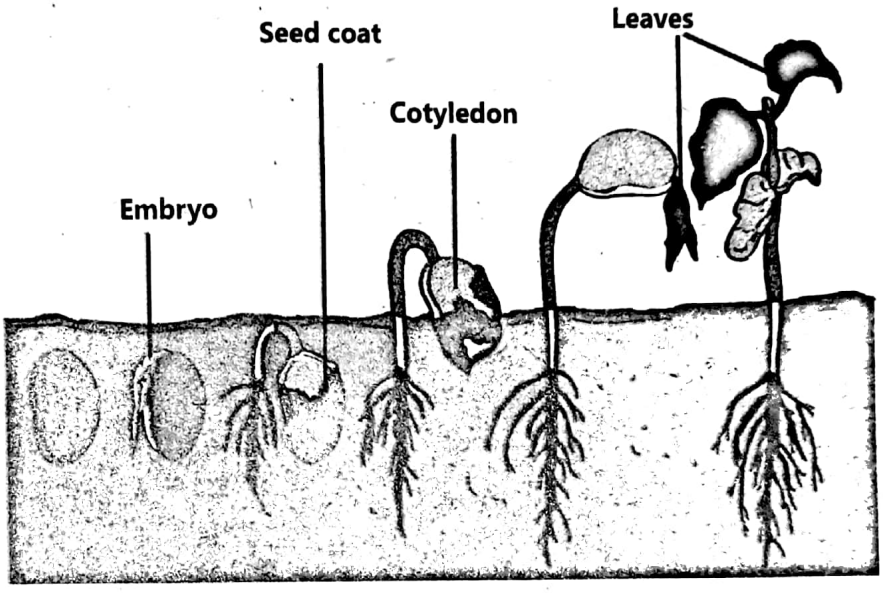
- **Al-Fahla al-Nabteyah by Ibn Wahshieh (Abu Bakr Ahmad ibn Ali Bin Qays):** This book is a treatise on the medicinal uses of plants. It is one of the earliest works on herbal medicine in the Islamic world.

- **Ferdos al-Hikmah by Abolhassan Ali ibn Rabbn al-Beri:** This book is a comprehensive work on medicine and pharmacology. It includes a section on botany, which discusses the identification, properties, and uses of plants.

Activity 3.4

Predict what will happen if we wrap bean seeds in a wet paper, tissue paper or cotton and put them in a plastic bag.

1. Before sowing bean seeds, keep them soaked in water for the whole night in water.
2. Put saw dust or sand in a transparent plastic cup.
3. Sow the bean seeds in saw dust or sand so that you can observe them easily.
4. After pouring some water, place the cup at a place where it can get sunshine.
5. Keep on pouring some water everyday.



6. Observe the seeds for two weeks and write your observations in the given table.

Days	Observation of Changes in the Seed
3rd day	
6th day	
9th day	
12th day	
15th day	

7. Draw the changes that occurred during the fifteen days. Write the changes observed, e.g. measure the length of the plant.

Conditions Necessary for Seed Germination

All seeds need water, air (oxygen) and proper temperature to germinate.

Activity 3.9

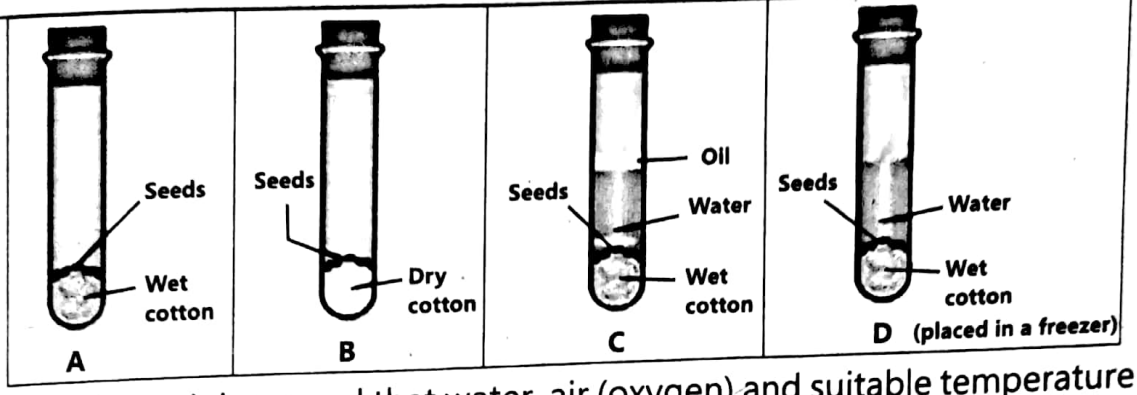
1. Take four test tubes and mark them as A, B, C, D.
2. Put wet cotton add four to five seeds in test tube A.
3. Put dry cotton add four to five seeds in test tube B.
4. Put cotton and add four to five seeds in test tube C. Pour water and then one or two drops of oil over it.
5. Put four to five seeds in test tube D and fill half of the test tube with water.
6. Close the mouth of the four test tubes by cork.
7. Put test tube A, B and C in the laboratory at room temperature.
8. Put test tube D in a freezer.
9. Pour water in test tube A daily, after removing the cork so that seeds may not dry up.
10. Observe the seeds for one week and enter your observation in the given table.

Test Tube	Number of Germinated Seed
A	
B	
C	
D	

(i) In which test tubes, the seeds germinated? Why did the seeds not germinate in some test tubes?

(ii) Why were the drops of oil put on the water in test tube C.

In test tube A, all necessary conditions for germination i.e., water, air and suitable temperature are present. There is no water in test tube B and no air in tube C. Test tube D has no suitable temperature.



From this experiment it is proved that water, air (oxygen) and suitable temperature are necessary conditions for seed germination.

Key Points

- The four parts of a flower are sepals, petals, stamens and carpel. The transfer of pollen grains from anther to the stigma is called pollination.
- The two types of pollination are self-pollination and cross pollination.
- Reproduction is the process by which organisms produce new organisms of their own kind for the continuation of their generation.
- In asexual reproduction, only one parent produces new organisms of its own kind. Sex cells are not involved in it.
- Layering, stem cutting, stem, tuber are the ways of asexual reproduction in plants.
- The fusion of male and female gametes results in the formation of zygote. Zygote divides repeatedly and forms embryo.
- Ovule forms seed. The ovary ripens to form fruit.
- Maize is monocot plant i.e., its seed has one cotyledon.
- The maize seed consists of seed coat, endosperm and embryo.
- The gram seed has two cotyledons.
- For seed germination the environmental conditions are water, air and suitable temperature.

Weblinks: Use the following weblinks to enhance your knowledge about the topics in this chapter.

Video of Flower Blossoming	1. https://www.youtube.com/watch?v=LjCzPp-MK48
Polinator	2. https://www.nationalgeographic.com/news/2015/05/150524-bees-pollinators-animals-science-gardens-plants/

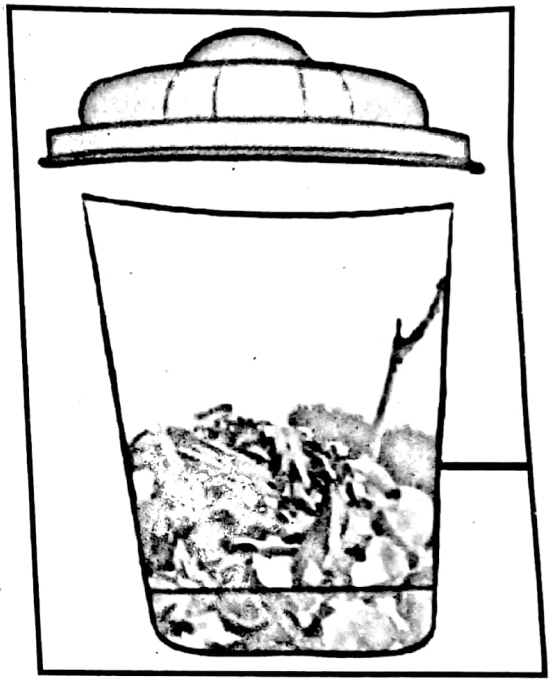
4. **Constructed Response Questions:**

i. What is the main cause of pollution?

ii. Why Government of Pakistan has banned the use of polythene bags?

iii. If it is written D2W on the polythene bags then why there is no ban on the use of such bags?

5. **Project:**



Preparing Organic Fertilizer

Requirements:

i. Plastic bucket

ii. Peels of vegetables, fruits and egg shell

iii. Grass

iv. Dry leaves

v. Water

vi. Wooden rod

Procedure:

i. In a small plastic bucket put peels of vegetables, fruits, egg shells, dry leaves and some grass.

ii. Pour water so that all of these become wet.

iii. Stir with the help of a wooden rod, so that these can get oxygen.

iv. When these things become brown it means the fertilizer has been made. It is called organic fertilizer. Now you can use it for the plants.