SUBJECT ENRICHMENT ACTIVITY

During Autumn break

CLASS: X

Teacher: Arun Kumar
PGT Biology
KV Golaghat, Assam

NOTE: Every activity is noted either in the form of recorded image or video and should be submitted to the teacher. Each activity performed by student is awarded with marks.

List of activities

Activity-1

Response of the plant to the direction of light

Requirements:- Conical flask, water, wire mesh, 2-3 freshly germinated bean seeds, cardboard box open from one side.

Method:- Take a conical flask and fill it with water. Cover the neck of the flask with a wire mesh. Now, keep two or three freshly germinated seeds on the wire mesh. Keep this flask in the cardboard box(open from one side) in such a manner that the open side of the box faces light coming from the window. Observe the plant after few days. Now, turn the flask so that the shoots are away from light and the roots towards light.

Leave it undisturbed in this position for a few days and then observe the difference if any.

Observations:-

1. When the flask is placed in the cardboard (open from one side) in a manner that the open side of box faces light coming from the window, the shoots of freshly germinated seeds have shown growth by bending towards light(positive phototaxis) and roots have shown growth by bending away from light(negative phototaxis)

2. When the flask was turned in a manner that the shoots moved away from light and roots moved towards light, you will find after few days that the shoots have again grown by bending towards light and the roots have grown again by bending away from light. This experiment, therefore, shows that the shoots of plants respond by showing growth movement towards light (positive phototropism) and roots of plants respond by showing growth movement away from light (negative phototropism)

Activity-2

To examine the growth of fungus on moist slice of bread

Requirement:- Moist slice of bread, Petridish, magnifying glass.

Method:- Wet a slice of bread in water and place it in a petridish or watch glass. Keep the moist slice of bread in a cool and dark place for 1-2 days. Observe the slice with the help of a magnifying glass.

Observations and Conclusion:- A white cottony mass appears on the surface of moist bread which turns black within few days. The white cottony mass is due to growth of bread mould (Rhizopus). The spores of fungus are present in the air. They settle on the moist bread and germinate to form white cottony mass of vegetative mycelium. The vegetative mycelium develops asexual sporangia which are black in colour. Each sporangium contains hundreds of minute black- coloured spores. These spores are dispersed in air to germinate on suitable substratum.

Activity-3

To observe different parts of seed

Method:- Soak a few seeds of Bengal gram(Chana)in a beaker and keep them overnight. Decant excess water and keep the seeds in a wet cloth. Leave them for a day. Now the seeds get germinated by giving out a few mm of radicle. Cut open the seeds carefully to observe the different parts.

Observation:- Observe the brown coloured testa that encloses two cotyledons laden with stored food material. A small embryo consisting of radicle and plumule lies in between the two cotyledons.

Activity-4

Vegetative reproduction in Potato

Requirements: A healthy potato, camera for taking images at different intervals

Method: keep a healthy potato tuber at any place in a room and leave it for few days

1.Take a potato and observe its surface.

2.Cut the potato into small pieces such that some pieces contain a notch or bud and some do not.

3.Spread some cotton on a tray and wet it. Place the potato pieces on this cotton.

4.Note where the pieces with the buds are placed.

5.Observe changes taking place in these potato pieces over the next few days. Make sure that the cotton is kept moistened.

Activity-5

Vegetative propagation in money plant

Requirements: Select a money-plant, scissors and water

Method: Cut some pieces such that they contain at least one leaf.

Cut out some other portions between two leaves.

Dip one end of all the pieces in water and observe over the next few days.

Which ones grow and give rise to fresh leaves?

What can you conclude from your observations?

Activity-6

Tabular form with observable characters in the family

Method:- Prepare a list of as many people or family members having **free or attached ear lobes**, **Different eye colour**, **Hair shapes (Curly or Straight),Skin colour (Fair , Dark & intermediate) ,Height (with different measurements) Attached eyes brows or free eye brows**.

Discussion and conclusion:- Above said characteristic features of human population are examples of variation in Human population. The observations recorded by you will reveal that vast majority of the people with Definite characters acquired from their parents.

Activity-7

Collection of set of Images of Flowers from a bud to a fruit in the garden

Method: take series of pictures of a healthy flower from bud stage to fruit stage.