

ACTIVITY NO. –6: Let's identify Guard cells and Epidermal Cells

Subject	Science
Class	IX
Chapter/Unit	Tissues
Topic	Guard cells and Epidermal cells
Time	40 minutes
Nature of Activity	Group

What will I learn (Learning Outcome)?

To identify the guard cells and epidermal cells in a leaf peel.

Skills: Analyzing

What I have to do?

To identify and compare the guard cells and epidermal cells in the leaf peel of monocot and dicot plants

What do I require?

Freshly plucked *Tradescantia* leaf (Monocot leaf), Freshly plucked *Rouvolfia* (Sarpagandha) leaf (Dicot leaf), glass slides, cover slips, safranin, glycerine, dissecting needle, brush, blotting paper, watch glass and compound microscope

What do I need to know?

Stomata are small openings found widely scattered on the epidermis of leaves and young stems. They are mostly found on the lower surface of a dicot leaf and on both the surfaces of a monocot leaf. Stomata regulate the exchange of gases and water vapour between the atmosphere and leaves.

➤ **Teacher's Activity**

Teacher will brief the experiment and make arrangements for the required apparatus and chemicals.

How will I proceed?

➤ **Student's Activity**

1. Take freshly plucked leaves of *Tradescantia* and *Rouvolfia*.
2. Stretch and break them by applying pressure.
3. While breaking them, keep them stretched gently so that some peel or skin projects out from the cut.
4. Remove the peels and put them in two different petri dishes filled with water.
5. Add a few drops of safranin in first petridish with *Tradescantia* leaf peel.(Petridish 1)
6. Now add a few drops of safranin in second petridishwith *Sarpagandha* leaf peel.(Petridish 2)

1. Desert plants cannot afford to lose water through stomata. How do they exchange gases?
2. Why are stomata absent in roots?

Let me evaluate myself

1. Jot down the steps involved in making a slide of epidermal peel of leaf .
2. Why should the leaf peel be mounted in glycerine?
3. How are guard cells different from the rest of the epidermal cells?
4. Where are the stomata usually found on a leaf? Where would the stomata be found on a floating water lily plant?
5. Make a drawing of a pair of guard cells and the surrounding epidermal cells. Label the guard cells, epidermis, and chloroplasts.