

SUBJECT : Science (Biology)

DIARY - LESSON PLAN

TOPIC : Tissues

Pre-Content/Content/Post-Content	Learning Outcome/Objective	
	General Objectives	Specific Objectives
Pre-Content: Motivating questions related to tissues Content: 1.Reason of having different types of tissues in plants and animals. 2. Plant Tissue- Kinds of plant tissue:- a. Meristematic Tissue b. Permanent Tissue b. Kinds of Permanent tissue. i) Simple Permanent tissue ii)Complex Permanent tissue 3. Animal Tissue- a.Kinds of animal tissue with the help of schematic diagram. b. Different types of epithelial tissue. c.Different types of muscular tissue. d. Nervous tissue e. Different types of connective tissue.	Students will be able to 1.identify and differentiate between plant tissue and animal tissue on the basis of their structure, function and location. 2.explore that as continuous division of cells in meristematic tissue results in growth, similarly persistent activity results in our progress and growth. 3. Appreciate the coordination of different types of tissues for proper functioning of an organ.	Students will be able to -conceptualize the meaning of term ‘Tissue’ 1.discover the reason of having different types of tissues in plants and animals. 2a.compare different kinds of meristematic tissue on the basis of their location and function.. 2b. identify / classify different types of permanent tissue on the basis of structure, function and location. 3a. Classify different types of animal tissue on the basis of their function. 3b. correlate the structure, functions and location of different types of epithelial tissue. 3c. Classify / identify different types of muscular tissue on the basis of their location and function. 3d.establish the relationship between the structure and function of nervous tissue. 3e. categorize different types of connective tissue on the basis of matrix present between them.

HOME WORK / ASSIGNMENTS : Text book exercise questions

AND PROGRESS

MONTH : August

CLASS : IXth

Teacher's Activity	Student's Activity	Teacher's Observation and Remedial
Teacher will - ask few questions to motivate the students and introduce the lesson. - help the students analyze the reason for having different types of tissues in plants and animals - compare the types of Meristematic tissue with the help of diagram Annexure 6(A) -explain the role of Meristematic tissues through activity - classify simple permanent tissue and compare the types by writing the differences in a tabular form - show charts and slides to clarify the concept Annexure 6(B) - compare Guard cells and Epidermal Cells through activity - classify complex permanent tissue and show permanent slides. - explain the types of animal tissues with the help of a flow chart. - explain the types of Epithelial tissue through PPT - explain the differences between the types of muscular tissues with diagrams - explain the structure of neuron and the function of nervous tissue - explain the types of connective tissue through PPT	Students will- -explain the same in their own words in the class to develop the concept - differentiate between plant and animal tissues. -draw diagram and note down the location and function of different types of meristems.. Annexure 6(a) - perform the activity ,note down the observations and draw conclusion -note down the differences -observe slides of T.S of stem and identify different types of tissues. Annexure 6(b) -perform the activity and answer the questions related to it. - observe the slides and identify xylem and phloem. -identify and note down the various types of animal tissues. - draw a table to write the location of epithelial tissues in our body. . – make a chart comparing the three types of muscular tissues. -draw the structure of neuron and relate with its function. -differentiate between bone and cartilage, ligament and tendon, write the functions of adipose and areolar connective tissue.	Teacher will write the observations after completion of the topic/s

Teaching Aids - Black board, slides, microscope, human cheek cells, leaf peel.

Methodology/ Innovative Methods - 1. Audio visual method- ICR 2. Demonstration of temporary mounted slides and permanent slides under the microscope.

Interdisciplinary Links – 1.. Arts- Students will improve their drawing skill through various diagrams.

2. Mathematics- Different shapes of tissues

HOD

Coordinator

Vice-Principal

Principal

Annexure 6(A),(a)

To Identify the role of meristematic tissues in plants

Duration- 8 days

Nature of the Activity- Group

Learning Outcome- The students will be able to explore the role of meristematic tissues in plants

What we have to do?

To study the tissues responsible for growth in plants

What do we require?

Two wide mouthed glass jars, two onion bulbs, inch tape, razor

What do we need to know?

Meristematic tissue has the ability to divide and re divide to provide growth to plants. Generally, growth of plants occurs from specific regions like root and shoot, nodes, girth of stem, leaf base, etc. Therefore,

meristematic tissue is present in these regions.

How will you proceed?

➤ Teacher's Activity

Teacher will arrange kits containing the materials required for the activity. Teacher will give instructions regarding the activity.

➤ Student's Activity

1. Take 2 wide mouthed glass jars and fill them with tap water.
2. Place the 2 onion bulbs at the mouth of each jar in such a way that stem and root parts of each bulb remain in contact with water.
3. Allow the roots to emerge out and grow in water.
4. Observe the growth of roots in both the onion bulbs for 3 days.
5. Measure and record the growth of roots on day 1,2 and 3 on your worksheet.
6. On 4th day, cut the root tips in jar B by about 1 cm. Again place the onion of jar B with roots hanging in water.
7. Observe the growth of roots in both the jars for 5 more days and record your observations.

What do we observe?

Observe the growth of roots in both the jars for five more days and record your observations.
Record the following observations:

Length of roots	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8
Jar A								
Jar B								

What have you learnt?

1. Which of the two onions has longer roots? Why?
2. Do the roots continue growing even after we have removed their tips?

What would I like to know ?

1. The cells of the meristematic tissue have the quality of self-renewal. Every time the cell divides, one cell remains identical to the parent cell and the others form specialized structures.
2. They lack vacuoles.
3. They are living and thin-walled.
4. The protoplasm of the cells is very dense.
5. The meristematic cells heal the wounds of an injured plant.

Extended Learning

1. Why meristematic tissues have large and conspicuous nuclei?
2. Why cells of meristematic tissues lack vacuoles?

3. Differentiate between meristematic and permanent tissue
4. What are the principles behind the use of meristematic cells as virus free ex-plants in micro propagation?
5. Construct a table relating 3 types of meristems with their location and function.

Annexure 6(B).(b)

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 *Rouwolfia* (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 *Rouwolfia*.
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 petridish with *Sarpagandha* leaf peel.(Petridish 2)

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.

