

LESSON PLAN

SUBJECT : BIOLOGY

TOPIC : The Living World

Pre-content/Content/ Post-Content	Learning Outcome/Objectives	
	General	Specific
Pre-Content Difference between living and non-living Content What is 'Living'? Classification of Organisms Taxonomical Aids Post-Content Classification of plants Classification of Animals in various taxa- with examples from each phylum	Students will be able to: -Appreciate the diversity in the living world -Understand the importance and use of various taxonomical aids -Identify the unifying factors among living beings -Learn to respect all living beings -Care for the environment and revere nature	Students will be able to: - Conceptualize the following terms: nomenclature, identification, classification, taxonomy and systematics - Arrive at the definitions of the above terms - Relate these terms with one another - Classify organisms in different taxa - Write scientific names of various organisms - Make and use taxonomic aids - Explain how various plants, animals and other organisms can be studied.

Homework and Assignments:

To answer questions at the end of the chapter

To write any 2 scientific names of organisms belonging to the five kingdoms

AND PROGRESS

MONTH: APRIL

CLASS: XI

Teacher's Activity	Student's Activity	Teacher's Observation And Remedial
Teacher will- -Arrange for a visit to the zoo and accompany them to school herbal garden -Discuss rules of nomenclature and terms like identification, classification, taxonomy, systematics -To guide students help in concluding properties of organisms from their scientific names. Activity based Learning-Instructions given regarding making of a herbarium sheet (Annexure 1) Ask students to find scientific names in common usage Several pictures of animals and plants to be shown in Interactive Classroom, on the net.	Students will- - Visit Delhi zoo. - Visit School garden, neighborhood park & identify 10 plant/animal species. - Try to conclude few features of organisms from their scientific names - Make a herbarium sheet - They would dry the leaf/twig & paste a slip with details of that plant in the bottom left corner of the sheet - They will give examples like <i>Amoeba</i>, <i>Paramoecium</i> and so on - Students see pictures of plants and animals according to the classification and several others of their choice	Students gave inputs on difference between living and non-living. Several terms were discussed and thus arrived at the definition of classification, taxonomy, systematics. Students participated in the discussion Students successfully made a herbarium sheet Students answered questions on taxonomical aids and how to study animals in different ways Students were interested and saw keenly

Teaching Aids : Computer Aided Instruction, BB, Chalk/ Smart board, stylus

Methodology/Innovative Methods: Discussion, Lecture cum demonstration, Laboratory Method, Activity based learning, brain storming.

Interdisciplinary Links: Chemistry- Molecular basis of Living, English-meanings of terms, Scientific names from different Languages

Vice-Principal

Principal

ANNEXURE 1

Activity – Making a Herbarium File

Subject	Biology
Class	XI
Chapter	What is Living ?
Topic	Taxonomic Aids
Duration	2 weeks
Nature of the Activity	Individual

What will I learn? (Learning Outcome) – (The students) will be able to understand how taxonomic aids are useful in studying plant diversity

Skills- Observing, Identifying various plants, Classifying

What I have to do? –To prepare a herbarium sheet and then repeat the activity for preparing a herbarium file

What do I require?

- a leaf/ twig of potted plant(s)
- a blank sheet of paper (A4 size)
- a blank label (as pasted on books)
- 2 old newspapers
- glue/ tape

What do I need to know?

Some of the ways by which we can study plant diversity-

1. By going for field trips with an expert- a botanist/ a naturalist/ an environment enthusiast; and asking questions and having discussions about the various adaptations/ features/ phenology of the plants growing in their natural environment.
2. Guided tour to Botanical Gardens- like the Botanical Garden in Kolkata, Lucknow so as to study plants
3. Virtual tour of museums preserving plant parts, including fossils

➤ **Teacher's activity-** Teacher will give the instructions along with the protocol (Student's activity)

How will I proceed?

➤ **Student's activity**

1. Each student to collect a leaf / twig from a potted plant growing in the house
2. Then to press it between the newspapers so as to avoid overlapping of the lamina/ leaves
3. To change the newspaper sheets after every 1-2 days
4. Once dry, to paste the twig carefully in the centre of the A4 sheet
5. To prepare a label with the desired information, including economic importance (using black and blue pen)

Scientific Name :.....
Common Name :.....
Habitat/Location :.....
Collector :.....
Collection Date :.....
Notes :.....

6. To paste it on the bottom left corner of the A4 sheet
7. The procedure can be repeated for more plants, to make a herbarium file.

What have I observed?

Number of days	Plant part taken	Observation
1 day	Leaf/ flower/ twig	Fresh, green
2 days		Drooping
3 days		Partly brown
4 days		----
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----		Completely dried, erect

What have I learnt?

By making a herbarium file (and later by seeing the files of other students), one can study about the plants of different areas and compare the kind of vegetation, even after several days/ months/ years, without spoiling the vegetation and natural growth of the plant (herb, shrub, tree)

What would I like to know ?

How the plant parts preserved in the herbaria, are disinfected so as to preserve this taxonomic aid for years?
Is there any way one can study when the plant flowers/ enters reproductive phase, through such aids?
Which plants are living fossils? How to find by using taxonomical aid- herbaria?

Let me Evaluate myself-

1. Why is the leaf dried before pasting? What will happen if the fresh leaf is pasted on the given sheet?
2. What are the advantages and disadvantages of making herbaria?
3. Find out other ways of studying plants- by maintaining records and using these as taxonomic aids ?
4. How does this exercise fit in the current situation, in 2020 ?
5. Why would this task be considered an eco-friendly one?